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THE
COMPLETE
DISTILLER.

BRITISH MUSEUM
21 JUL 48

THE COMPLETE DISTILLER:

CONTAINING,

I. The Method of performing the various Proceſſes of Diſtillation, with Deſcriptions of the ſeveral Inſtruments: The whole Doctrine of Fermentation: The manner of drawing Spirits from Malt, Raiſins, Moloſſes, Sugar, *&c.* and of rectifying them: With Inſtructions for imitating to the greateſt Perfection both the Colour and Flavour of *French* Brandies.

II. The manner of diſtilling all Kinds of Simple Waters from Plants, Flowers, *&c.*

III. The Method of making all the compound Waters and rich Cordials ſo largely imported from *France* and *Italy*; as likewiſe all thoſe now made in *Great Britain*.

To which are added,

Accurate Deſcriptions of the ſeveral Drugs, Plants, Flowers, Fruits, *&c.* uſed by Diſtillers, and Inſtructions for chuſing the beſt of each Kind.

The Whole delivered in the plaineſt manner, for the Uſe both of *Diſtillers* and *Private Families*.

By *A. COOPER*, DISTILLER.

LONDON:

Printed for P. Vaillant in the *Strand*; and R. Griffiths in *Pater-Noſter-Row*.

M.DCC.LVII.

BRITISH MUSEUM
21 JUL 48

THE

PREFACE.

IT is now ſome Years ſince I firſt formed a Deſign of compiling a complete Syſtem of Diſtillation; and accordingly read moſt of the Treatiſes on that Subject, and extracted from each what I thought neceſſary for my Purpoſe, propoſing to ſupply the Defects from my own Experience. It is, however, more than probable, that this Deſign had never been executed, had not a French *Treatiſe of Diſtillation*[*] *fell*

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[*] This Treatiſe is intitled *Traité Raiſonné de la Diſtillation; ou La Diſtillation réduite en Principes: Avec un Traité des Odeurs. Par M.* DE'JEAN, *Diſtillateur.* Printed at *Paris*, in the Year, M.DCC.LIII.

into my Hands; but finding in that Book many uſeful Obſervations, and a great Number of Recipes for making various Sorts of compound Waters and Cordials, I determined to finiſh the Work I had begun, being now enabled to render it much more uſeful than it was poſſible for me otherwiſe to have done. What I have tranſlated from this Author, will, I dare ſay, be kindly received by our Diſtillers, as the manner of making many of the foreign Compound Waters, &c. *has never before been publiſhed in the* Engliſh *Language. And I flatter myſelf, if the ſeveral Hints interſperſed through this Treatiſe are carefully adverted to, Diſtillation may be carried to a much greater Degree of Perfection than it is at preſent; and the celebrated Compound Waters and Cordials of the* French *and* Italians, *imported at ſo great an Expence, and ſuch Detriment to the Trade of this*

Nation, may be made in England, *equal to thoſe manufactured abroad.*

My principal Intention being to render this Treatiſe uſeful to all, I have endeavoured to deliver every thing in the plaineſt and moſt intelligible Manner. Beauty of Stile is not, indeed, to be expected in a Work of this Nature; and therefore if Perſpicuity be not wanting, I preſume the Reader will forgive me, if he meets with ſome Paſſages that might have been delivered in a more elegant Manner. I have alſo, for the ſame Reaſon, avoided, as much as poſſible, Terms of Art, and given all the Recipes in Words at length.

Diſtillation, tho' long practiſed, has not been carried to the Degree of Perfection that might reaſonably have been expected. Nor will *this appear ſurprizing, if it be conſidered, that the Generality of Diſtillers proceed in the ſame beaten Tract, without hardly ſuſpecting their Art capable of Improvements; or giving themſelves any Trouble to enquire into the Rationale of the ſeveral Proceſſes they daily perform. They imagine, that the Theory of Diſtillation is very abſtruſe, and above the Reach of common Capacities; or, at leaſt, that it requires a long and very aſſiduous Study to comprehend it; and, therefore, content themſelves with repeating the Proceſſes, without the leaſt Variation. This Opinion, however ridiculous it may appear to thoſe not acquainted with the preſent Practice of Diſtillers, has, I am ſatisfied, been the principal Cauſe why Diſtillation has not been carried to the Height it would otherwiſe have been. I have therefore endeavoured in the following Treatiſe to deſtroy this idle Opinion, and ſhew* *the Diſtiller how he may proceed on rational Principles, and direct his Enquiries in ſuch a manner as cannot fail of leading him to ſuch Diſcoveries in his Profeſſion, as will be attended with Advantage both to himſelf and his Country.*

But it is not to thoſe only who make Diſtillation their Profeſſion, that I have laboured to render this Treatiſe uſeful; I have alſo endeavoured to extend its Utility to thoſe who diſtil Simple and Compound Waters for their own Uſe, or to diſtribute to their indigent Neighbours. And for this Reaſon I have adapted moſt of the Recipes to ſmall Quantities, and briefly enumerated the Virtues and Uſes of each Compoſition.

The ſhort Deſcriptions of the moſt capital Ingredients, and the Directions for chuſing the beſt of each Kind,

Kind, I flatter myſelf will not be conſidered as improper: Becauſe the Goodneſs of every Compoſition, muſt, in a great Meaſure, depend on the Goodneſs of the Ingredients.

As Typographical Errors are almoſt impoſſible to be avoided, the Reader will, I hope, pardon any he may chance to meet with in the enſuing Treatiſe; and the rather as, I dare ſay, there are none but what he may himſelf very eaſily correct.

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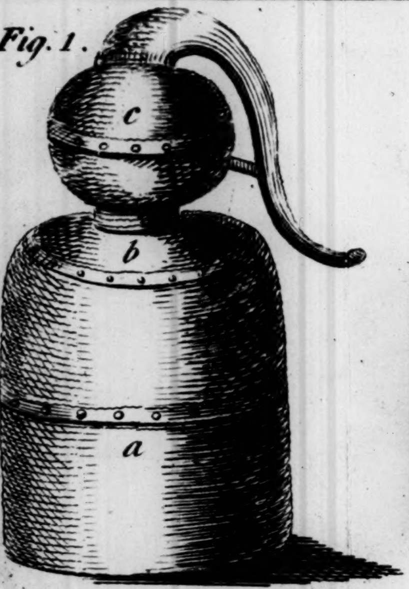

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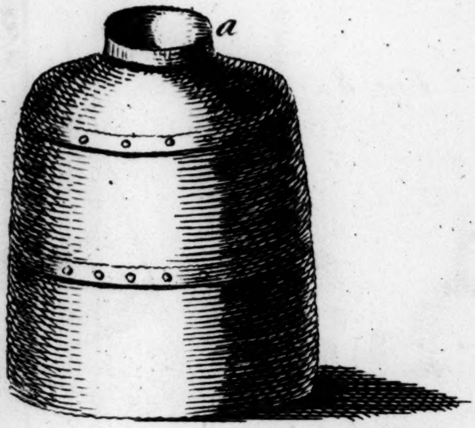

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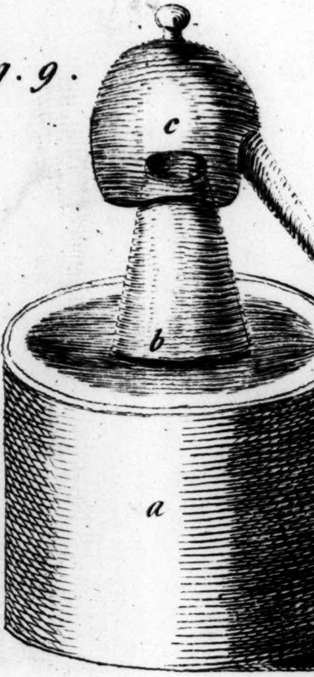

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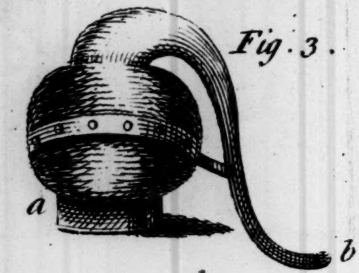

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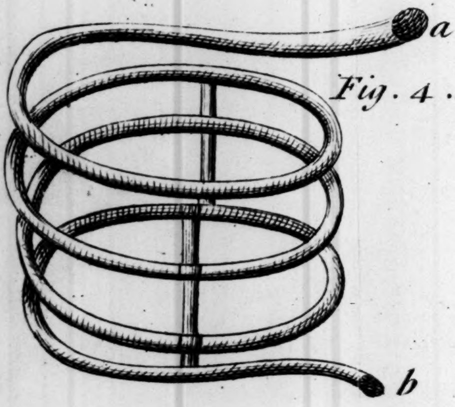

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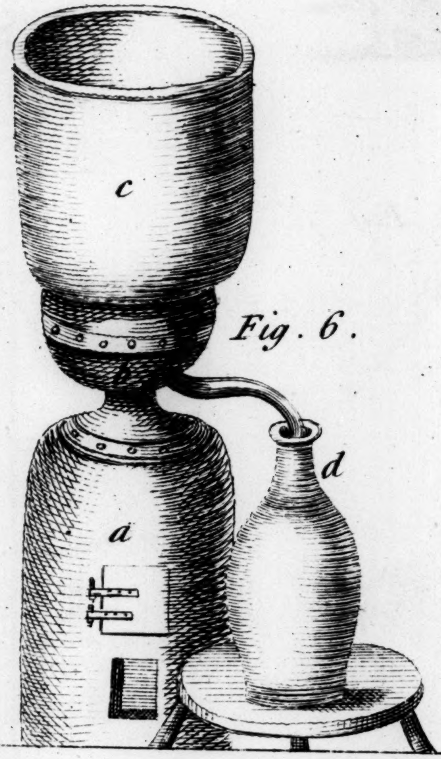

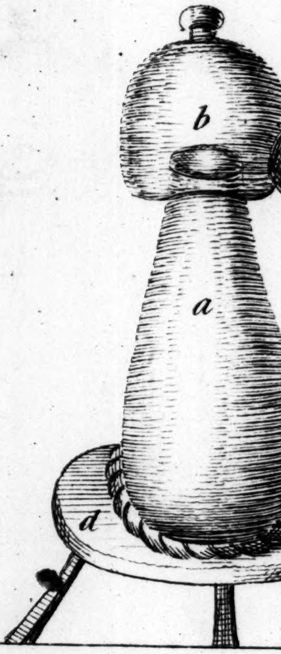

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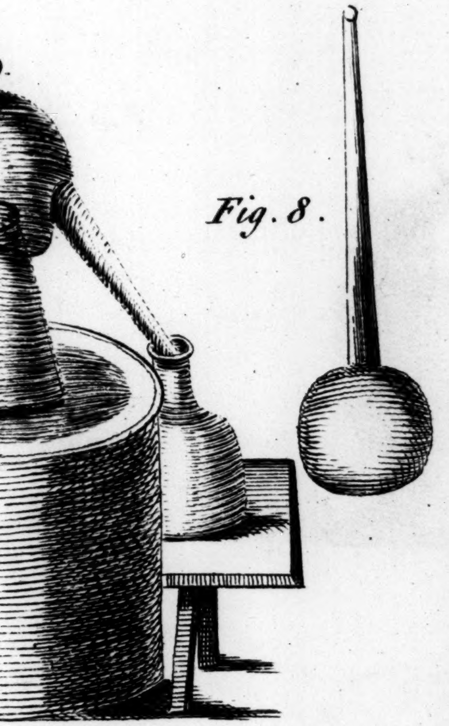

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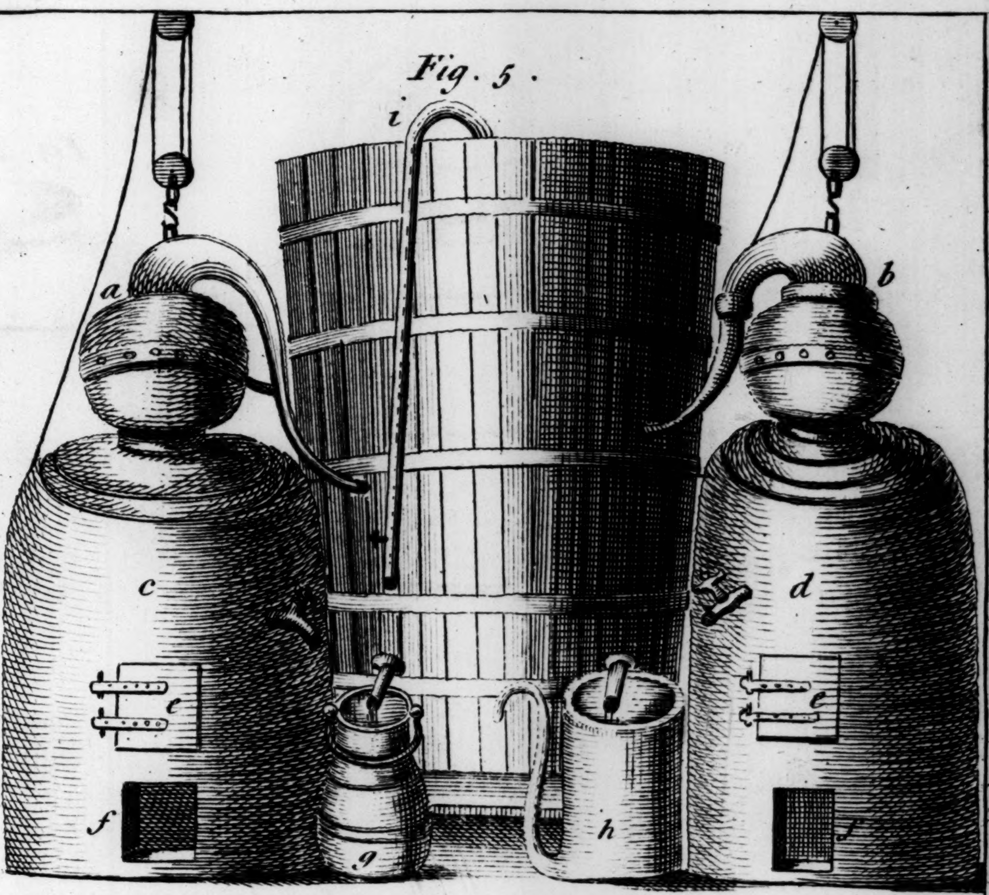

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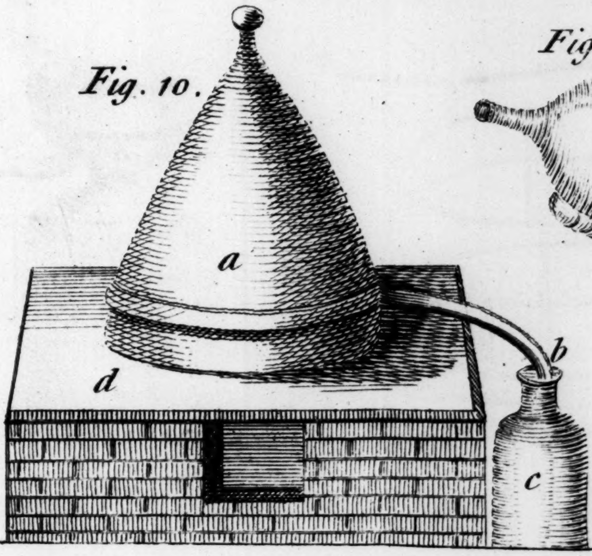

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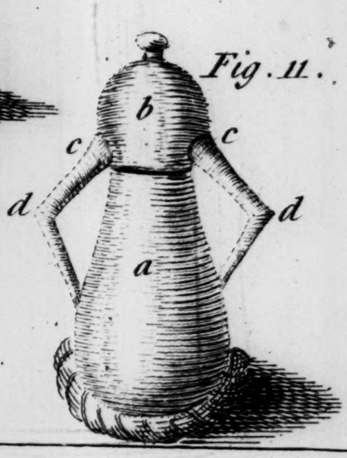

A
Complete Syſtem
OF
DISTILLATION.

DISTILLATION is the Art of ſeparating, or drawing off the ſpirituous, aqueous, and oleaginous Parts of a mixt Body from the groſſer, and more terreſtrial Parts, by means of Fire, and condenſing them again by Cold.

We ſhall therefore divide this Treatiſe into three Parts; in the firſt, we ſhall explain the Method of diſtilling Spirits from various Subſtances; in the ſecond, the manner of drawing ſimple Waters; and in the third, the beſt Methods of making cordial or compound Waters.

PART I.

Of the Diſtillation of Spirits.

BY the Diſtillation of Spirits is to be underſtood the Art by which all inflammable Spirits, Brandies, Rums, Arracks, and the like, are procured from vegetable Subſtances, by the means of a previous Fermentation, and a ſubſequent Treatment of the fermented Liquor by the Alembic, or hot Still, with its proper Worm and Refrigeratory.

But as it is impoſſible to extract vinous Spirits from any vegetable Subject without Fermentation, and previous to this Brewing is often neceſſary, it will be requiſite firſt to conſider theſe Operations.

CHAP. I.

Of Brewing, in order to the Production of inflammable Spirits.

BY Brewing, we mean the extracting a Tincture from ſome vegetable Subſtance, or diſſolving it in hot Water, by which means it becomes proper for a vinous Fermentation.

A Solution, or fermentable Tincture of this kind, may be procured, with proper Management, from any vegetable Subſtance, but the more readily and totally it diſſolves in the Fluid, the better it is fitted for Fermentation, and the larger its Produce of Spirits. All inſpiſſated vegetable Juices therefore, as Sugar, Honey, Treacle, Manna, *&c.* are very proper for this Uſe, as they totally diſſolve in Water, forming a clear and uniform Solution; but Malt, for its Cheapneſs, is generally preferred in *England*, though it but imperfectly diſſolves in hot Water. The worſt ſort is commonly choſen for this Purpoſe; and the Tincture, without the Addition of Hops, or Trouble of boiling it, is directly cooled and fermented.

But in order to brew with Malt to the greateſt Advantage, the three following Particulars ſhould be carefully attended to: 1. the Subject ſhould be well prepared; that is, it ſhould be juſtly malted, and well ground: For if it be too little malted, it will prove hard and flinty; and conſequently, only a ſmall Part of it diſſolve in the Water: And, on the other hand, if too much malted, a great Part of the finer Particles, or fermentable Matter, will be loſt in the Operation. With regard to grinding, the Malt ſhould be reduced to a kind of coarſe Meal; for Experience has ſhewn, that by this means, the whole Subſtance of the Malt may, through the whole Proceſs, continue mixed with the Tincture, and be diſtilled with it; whereby a larger Quantity of Spirit will be obtained, and alſo great Part of the Trouble, Time and Expence in Brewing ſaved. This Secret depends upon thoroughly mixing, or briſkly agitating the Meal, firſt in cold Water, and then in hot; and repeating this Agitation after the Fermentation is finiſhed: When the thick turbid Waſh muſt be immediately committed to the Still. And thus the two Operations of Brewing and Fermenting may very commodiouſly be reduced to one, to the no ſmall Profit and Advantage of the Diſtiller.

The ſecond Particular to be attended to, is, that the Water be good, and properly applied. Rain Water is the beſt adapted to Brewing; for it not only extracts the Tincture of the Malt better than any other; but alſo abounds in fermentable Parts, whereby the Operation is quickened, and the Yield of the Spirit increaſed. The next to that of Rain, is the Water of Rivers and Lakes, particularly ſuch as waſh any large Tract of a fertile Country, or receive the Sullage of populous Towns. But whatever Water is uſed, it muſt ſtand in a hot State upon the prepared Malt, eſpecially if a clear Tincture be deſired; but the greateſt Care muſt be taken to prevent the Malt from running into Lumps or Clods; and, indeed, the beſt Way to prevent this, is to put a ſmall Quantity of cold Water to the Malt firſt, and mix them well together, after which the remaining Quantity of Water may be added in a State of boiling, without the leaſt Danger of coagulating the Malt, or what the Diſtillers call, making a Pudding.

It has been found by Experience, that a certain Degree of Heat is neceſſary to extract the whole Virtue of the Malt: This Degree may, by the above Method, be determined to the greateſt Exactneſs, as the Heat of boiling Water may at once be leſſened to any aſſigned Degree of Warmth, by a proper Addition of cold Water; due Regard being had to the Seaſon of the Year, and the Temperature of the Air. This Improvement, with that mentioned above, of reducing the two Operations of Brewing and Fermentation to one, will be attended with conſiderable Advantage.

With regard to the proper Quantity of Water, it muſt be obſerved, that if too little be uſed, a viſcid clammy Mixture will be produced, little diſpoſed to ferment, nor capable of extracting all the ſoluble Parts of the Malt. On the other hand, too much Water renders the Tincture thin and aqueous, and by that means increaſes the Trouble and Expence in all Parts of the Operation. A due Medium, therefore, ſhould be choſen; and Experience has ſhewn, that a Waſh about the Goodneſs of that deſigned by the *London* Brewers for Ten Shilling Beer, will beſt anſwer the Diſtiller's Purpoſe. When a proper Quantity of Water is mixed with the Malt, the whole Maſs muſt be well agitated, that all the ſoluble Parts of the Malt may often come in contact with the aqueous Fluid, which being well ſaturated after ſtanding a proper time, muſt be drawn off, freſh Water poured on, and the Agitations repeated, till at laſt the whole Virtue, or ſaccharine Sweetneſs of the Malt is extracted, and only a fixed huſky Matter remains, incapable of being diſſolved by either hot or cold Water.

The third requiſite Particular is, that ſome certain Additions be uſed, or Alterations made according to the Seaſon of the Year, or the Intention of the Operator. The Seaſon of the Year is very neceſſary to be conſidered. In the Summer, the Water applied to the Malt muſt be colder than in the Winter; and in hot ſultry Weather, the Tincture muſt be ſuddenly cooled, otherwiſe it will turn eager ; and, in order to check the too great Tendency it has to Fermentation, when the Air is hot, it will be neceſſary to add a proper Quantity of unmalted Meal, which being much leſs diſpoſed to Fermentation than Malt, will greatly moderate its Impetuoſity, and render the Operation ſuitable to the Production of Spirits, which, by a too violent Fermentation, would, in a great Meaſure, be diſſipated and loſt.

CHAP. II.

Of Fermentation.

THE Tincture, or, as the Diſtillers call it, the Waſh, being prepared, as in the foregoing Chapter, it is next to be fermented ; for, without this Operation, no vinous Spirit can be produced.

By Fermentation is meant that inteſtine Motion performed by the inſtrumental Efficacy of Water, whereby the Salt, Oil and Earth of a fermentable Subject, are ſeparated, attenuated, tranſpoſed, and again collected, and recompoſed in a particular Manner.

The Doctrine of Fermentation, is of the greateſt Uſe, and ſhould be well underſtood by every Diſtiller, as it is the very Baſis of the Art; and, perhaps, if more attended to, a much purer Spirit, as well as a greater Quantity of it, might be procured from the ſame Materials than at preſent. We ſhall therefore lay down a conciſe Theory of Fermentation, before we proceed to deliver the Practice.

Every fermentable Subject is compoſed of Salt, Oil, and a ſubtile Earth; but theſe Particles are ſo ſmall, that, when aſunder, they are imperceptable to the Senſes; and, therefore, when mixed with an aqueous Fluid, they leave it tranſparent; neither have fermentable Bodies any Taſte, except that of Sweetneſs.

Theſe Particles are each compoſed of Salt, Oil and Earth, intimately mixed in an actual Coheſion, Connexion, and Union; and, therefore, when any one of thoſe Principles too much abounds in any Subject, ſo that an intimate Union is prevented, the whole Efficacy of the Fermentation is either ſtopped or impaired, or at leaſt limited to one certain Species.

This equal Connexion of Salt, Oil and Earth into a ſingle compound Particle, forms a Corpuſcle ſoluble in Water; or, to ſpeak more philoſophically, this compound Corpuſcle is, by means of its ſaline Particles, connected with the aqueous Corpuſcles, and moved up and down with them. But where theſe Corpuſcles are not thus connected with the Water, a Number of them join together, and form either a groſs, or a looſe, chaffy, and ſpungy Matter.

When theſe compound Particles are diluted with a ſmall Quantity of an aqueous Fluid, they feel ſlippery, clammy, and unctuous to the Touch, and affect the Taſte with a kind of ropy Sweetneſs. And when a proper Quantity of the Fluid is added, a Commotion is preſently excited, and afterwards a ſubtile Separation.

This Commotion and Separation firſt begins in the whole Subſtance; for before the Addition of Water, the Subject may remain in dry, ſolid, and large Pieces, as in Malt, Sugar, *&c.* which being reduced to Powder, each Grain thereof is an Aggregate of many ſmaller compound Corpuſcles; theſe being put into Water, diſſolve, and ſeparately float therein, till at length, they become

come ſo ſmall as to be inviſible, and only thicken the Conſiſtence of the Liquor.

Theſe Corpuſcles being thus ſeparated from one another, there next enſues a Separation of their component Particles; that is, the Salt, the Oil, and the Earth, are divided by the Interpoſition of the aqueous Particles.

The firſt Commotion is no more than a bare Solution; for the ſaline Particles being eaſily diſſolvable in Water, they are immediately laid hold of by the aqueous Particles, and carried about with them. But the ſucceeding Separation, or fermentative Motion, is a very different thing; for by this the ſaline Particles are divided from thoſe of Oil and Earth, partly by the Impulſe of the others in their Motion, and partly by the Force of the aqueous Particles, which are now continually meeting and daſhing againſt them.

This Motion is performed by the Water, as a Fluid, or Aggragate of an infinite Number of Particles, in actual and perpetual Motion; their Smallneſs being proportionable to that of the fermenting Corpuſcles, and their Motion, or conſtant Suſceptibility of Motion, by Warmth, and the Motion of the Air, diſpoſing them to move other ſubtile moveable Corpuſcles alſo. The certain Agreement of Figure, or Size between the aqueous Particles, and thoſe of the Salt in the fermentable Subject, tends greatly to increaſe this Commotion; for, by this means, they are readily and very cloſely connected together; and therefore move almoſt like one and the ſame compound Corpuſcle; whilſt the Water is not at all diſpoſed to cohere immediately with either the Oil or Earth. And thus an unequal Concuſſion is excited in the compound Corpuſcles of the fermentable Subject; which Concuſſion at length ſtrikes out the ſaline Particle, looſens the others, and finally produces a Separation of the original Connexion of the Subject.

An aqueous Fluid, therefore, is the true, and indeed the only, Inſtrument for procuring a fermentable Motion in theſe compound Corpuſcles of the Subject: For were an oily Fluid poured upon any fermentable Subject, no vinous Fermentation would enſue; as the Oil could neither give a ſufficient Impulſe on the compound Corpuſcles, which are groſſer than its own conſtituent Particles, nor divide the oily or ſaline Particles of the Subject from their Connexion with the others, which detain, and, as it were, envelope, or defend them from its Action.

The compound Corpuſcles of the fermentable Subject being affected by the perpetual Motion of the Particles of the aqueous Fluid, a proper Degree of Motion is neceſſary, or that the Particles move with a proper Degree of Velocity, which principally depends on external Heat. A conſiderable Degree of Cold, indeed, will not abſolutely prevent Fermentation, though it will greatly retard it; and a boiling Heat will prevent it ſtill more. A tepid, or middle Degree of Heat between Freezing or Boiling, is therefore the moſt proper for promoting and quickening the Operation.

The Admiſſion of Air, alſo, though not of abſolute Neceſſity, yet greatly promotes and quickens the Action, as being a capital Inſtrument in putting in a proper Degree of Motion the oily Particles of the Subject. But whilſt the Air thus contributes to haſten the Effect, it cauſes at the ſame time by its Activity ſome remarkable Alterations in the oily Particles; for it not only moves, but abſolutely diſſolves and diſplaces them from their original Connexions; and thus carries them off with itſelf from the whole Maſs. And, therefore, though the Conſideration of the Air does not ſo properly belong to Fermentation in the general, yet it does in particular; as having an accidental Power to alter every Species of this Operation: Conſequently its Agency ought to be well underſtood, either to procure Alterations at pleaſure in the fermenting Maſs, or to prevent and correct impending Dangers.

The oily Particles thus ſeparated and diſſolved by the Air, are alſo elaſtic, though they probably derive that Property from their Intercourſe with the Air itſelf, and their being rendered extremely minute.

When, therefore, an aqueous Fluid is added to a fermentable Subject expoſed to a temperate Heat, a fermentative Struggle immediately ariſes, the ſaline Part of the compound Particles being diſſolved by the continual inteſtine Motion of the Water, and carried up and down with it in all Directions, amidſt an infinite Number of other Particles, as well fermentable, as aqueous ones; whence, by this Colliſion and Attrition, the ſaline Particles are diſſolved, and ſeparated from their Connexion with the oily and earthy. And as the oily Particles are the moſt ſubtle and elaſtic, they would, by this means, be thrown up to the Surface of the Liquor, and carried off by the Air, were they not cloſely connected with the earthy ones, whoſe Gravity prevents their Evaporation, and, by coming in contact with others of the ſame kind, form

Aggregations, and ſink down, with the oily Particles, to the Bottom. But before theſe can form a Bulk too large to be ſupported by the Water, many of the oily Particles are, by their frequent Colliſions with the aqueous Fluid, ſeparated from the earthy ones; and, by Degrees, more ſtrongly connected again with the ſaline ones; whilſt, on the other hand, the ſame ſaline Particles imbibe ſome of the earthy ones, which being left ſingle, upon their Separation from the oily Particles, floated about ſeparately in the Fluid.

And hence proceed the ſeveral different Conſequences of Fermentation; *viz.* 1. From the Separation of the ſaline Particles of the fermentable Subject proceeds the tart, ſaline, or acid Taſte of the Liquor; which is more ſenſible at firſt, before the Liquor is duly compoſed and ſettled, or the due Arrangement and Connection of the ſaline Particles with thoſe of the oily and earthy Kinds, completed: After which the Liquor proves milder, ſofter, or leſs pungent. 2. From the oily Particles being ſet at liberty, proceeds the ſtrong Smell of the Liquor, and the Head or ſhining Skin upon the Surface. 3. The earthy Particles collecting together in Cluſters, cauſe the Fluid to appear turbid, and afterwards a viſible earthy, or clay-like Matter to be precipitated: And ſome of the earthy Parts, in their Motion, arriving at the Head, or oily Skin on the Surface, cauſe it to thicken; and afterwards taking it down along with it, thus conſtitute the Lees which abound in Oil. 4. From this new Struggle or Colliſion, which is productive both of Solution, and a new Connection in the ſaline and earthy Corpuſcles, proceeds the Ebullition in Fermentation. And, laſtly, by the ſame repeated Coalition of the oily with the aqueous and ſaline Particles, the inflammable Spirit is produced.

Having thus laid down a conciſe Theory of Fermentation, we ſhall now proceed to the Practice.

The Waſh being brought to a tepid, or lukewarm State in the Backs, a proper Quantity of a good-conditioned Ferment is added; but if the Ferment be ſolid, it ſhould be previouſly broke into ſmall Pieces, and gently thinned either with the Hand, Whiſp, *&c.* in a little of the tepid Liquor. A complete and uniform Solution, however, ſhould not be attempted, becauſe that would greatly weaken the Power of the Ferment, or deſtroy its future Efficacy. The whole intended Quantity, therefore, being thus looſely mixed with a moderate Parcel of the Liquor, and kept in a tepid State, either by ſetting it near the Fire, or otherwiſe, and free from the too rude Commerce of the external Air; more of the inſenſibly warm Liquor ought to be added, at proper Intervals, till, at length, the whole Quantity is properly ſet to working together. And, thus, by dividing the Buſineſs into Parts, it may much more ſpeedily and effectually be performed, than by attempting it all at once.

The whole Quantity of Liquor being thus ſet to work, ſecured in a proper Degree of Warmth, and defended from a too free Intercourſe of the external Air, Nature itſelf, as it were, finiſhes the Proceſs, and renders the Liquor fit for the Still.

By Ferments, we mean any Subſtance, which, being added to any rightly diſpoſed fermentable Liquor, will cauſe it to ferment much ſooner and faſter than it would of itſelf; and, conſequently, render the Operation ſhorter; in contradiction to thoſe abuſively called ſo, which only correct ſome Fault in the Liquor, or give it ſome Flavour. Hence we ſee, that the principal Uſe of Ferments is to ſave Time, and make Diſpatch in Buſineſs; whilſt they only occaſionally, and, as it were, by Accident, give a Flavour, and increaſe the Quantity of Spirit. And, accordingly, any fermentable

Liquor, may, without the Addition of any Ferment, by a proper Management of Heat alone, be brought to ferment, and even more perfectly, though much ſlower, than with their Aſſiſtance.

Theſe Ferments are, in general, the Flowers and Fæces of all fermentable Liquors, generated and thrown to the Surface, or depoſited at the Bottom, either during the Act of Fermentation, or after the Operation is finiſhed.

Two of theſe are procurable in large Quantities, and at a ſmall Expence; we mean, Beer-Yeaſt and Wine-Lees; a prudent and artificial Management, or Uſe of which, might render the Buſineſs of Diſtillation much more facile, certain and advantageous.

It has been eſteemed very difficult, and a great Diſcouragement, in the Buſineſs of Diſtillation, to procure a ſufficient Stock of theſe Materials, and preſerve them at all times ready for uſe. The whole Secret conſiſts in dexterouſly freeing the Matter from its ſuperfluous Moiſture; becauſe in its fluid State, it is ſubject to a farther Fermentation, which is productive of Corruption; in which State it becomes intollerably fœtid and cadaverous.

The Method of expoſing it to the Air till it has required a proper Conſiſtence, is ſubject to great Inconveniencies; and ſo peculiar and careful a Management neceſſary, that it rarely ſucceeds.

The beſt Way, therefore, is to preſs it very ſlowly and gradually, in a thick, cloſe, and ſtrong Canvas Bag, after the manner of Wine Lees, by the Tail-preſs, till it becomes a kind of Cake; which, though ſoft, will eaſily ſnap, or break dry and brittle between the Fingers. Being reduced to that Conſiſtence, and cloſely packed up in a tight Caſk, it will remain a long Time uncorrupted, preſerve its Fragrancy, and conſequently, fit to be uſed for fermenting the fineſt Liquor.

The ſame Method is alſo practicable, and to the ſame Advantage, in the Flowers or Yeaſt of Wine; which may be thus commodiouſly imported from abroad: Or, if theſe cannot be procured, others of equal Efficacy may be procured from freſh Wine Lees, by barely mixing and ſtirring them into a proper warm Liquor; whence the lighter, or more volatile and active Parts of the Lees, will be thrown to the Surface, and may eaſily be taken off, and preſerved, by the above-mentioned Method, in any deſired Quantity. And hence, by a very eaſy Proceſs, an inexhauſtible Supply of the moſt uſeful Ferments may be readily and ſucceſſively procured, ſo as to prevent for the future all Occaſion of Complaint for want of them, in the Diſtiller's Buſineſs.

Experience has demonſtrated, that all Ferments abound much more in eſſential Oil, than the Liquor which produced them; and conſequently they retain, in a very high Degree, the Smell and Flavour of the Subject. It is therefore requiſite, before the Ferment is applied, to conſider what Flavour is intended to be introduced, or what Species of Ferment is moſt proper for the Liquor.

The Alteration thus cauſed by Ferments is ſo conſiderable, as to render any neutral fermentable Liquor, of the ſame Flavour with that which yielded the Ferment. This Obſervation is of much greater Moment than will preſently be conceived; for a new Scene is hereby opened, both in the Buſineſs of Diſtillation, and others depending upon Fermentation. It muſt, however, be obſerved, that its Benefit does not extend to Malt, treated in the common Method; nor to any other Subject but what affords a Spirit tolerably pure and taſteleſs: For, otherwiſe, inſtead of producing a ſimple, pure, and uniform Flavour, it cauſes a compound, mixed, and unnatural one. How far the fine Stiller may profit by it, well deſerves his Attention; and whether our native Cyder Spirit, Crab Spirit, *&c.* which have very little Flavour of their own, may not, by this Artifice, be brought nearly, if not intirely, into the State of ſome foreign Brandies, ſo highly eſteemed, is recommended to Experience.

It is common with Diſtillers, in order to increaſe the Quantity of Spirit, give it a particular Flavour, or improve its Vinoſity, to add ſeveral things to the Liquor, during the Time it is in a State of Fermentation; and theſe Additions may properly be reduced to Salts, Acids, Aromatics, and Oils.

All rich vegetable Juices, as Treacle, Honey, *&c.* which either want a natural Acid, have been deprived of it, or contain it in too ſmall a Quantity, will be greatly improved by adding, at the Beginning of the Operation, a ſmall Quantity of the vegetable or fine mineral Acids; as Oil of Sulphur, Glauber's Spirit of Salt, Juice of Lemons, or an aqueous Solution of Tartar. Theſe Additions will either give, or greatly improve the vinous Acidity of the Subject, but not increaſe the Quantity of the Spirit, that Intention being performed by Aromatics and Oils.

All pungent Aromatics have a ſurpriſing Quality of increaſing the Quantity of the Spirit, as well as in altering, or improving the Flavour; but their Uſe requires that the Fermentation ſhould be performed in cloſe Veſſels. And if a large Quantity be intended to be added, Care muſt be taken not to do it all at once, leſt the Oilineſs of the Ingredients ſhould check the Operation. But if the Flavour be the principal Intention, they ſhould not be added till the Operation is nearly finiſhed. After the ſame Manner a very conſiderable Quantity of any eſſential vegetable Oil may be converted into a ſurpriſingly large Quantity of inflammable Spirit; but great Caution is here alſo neceſſary not to drop it too faſt, or add too large a Quantity at a time, which would damp the Fermentation; it being the ſureſt Method of checking, or totally ſtopping this Operation, at any Point of Time required. The beſt Method, therefore, of adding the Oil, ſo as to avoid all Inconveniencies, is to rub the Oil in a Mortar with Sugar, which the Chemiſts call making an *Olæoſaccharum*, by which Means the Tenacity of the Oil will be deſtroyed, and the whole readily mix with the Liquor, and immediately ferment with it. The Diſtiller would do well to conſider theſe Obſervations attentively, as he may thence form an advantageous Method of increaſing the Quantity of Spirits, and at the ſame Time greatly improve their Quality and Flavour.

But in order to put theſe Obſervations in practice, particular Regard muſt be had to the containing Veſſel in which the Fermentation is performed, the Excluſion of the Air, and the Degree of the external Heat or Cold.

With regard to the containing Veſſel; its Purity, and the Proviſion for rendering it occaſionally cloſe, are chiefly to be conſidered. In cleanſing it, no Soap, or other unctuous Body ſhould be uſed, for fear of checking the Fermentation; and, for the ſame Reaſon, all ſtrong alkaline Lixiviums ſhould be avoided. Lime-water, or a turbid Solution of quick Lime may be employed for this Purpoſe, without producing any ill Effect; it will alſo be of great Service in deſtroying a prevailing acetous Salt, which is apt to generate in the Veſſels when the warm Air has free Acceſs to them; and tends to pervert the Order of Fermentation, and, inſtead of a Wine or Waſh, produce a Vinegar. Special Care muſt alſo be had, that no Remains of Yeaſt, or cadaverous Remains of former fermented Matters, hang about the Veſſels, which would infect whatever ſhould be afterwards put into them; and cannot, without the utmoſt Difficulty, be perfectly cured and ſweetened.

The occaſional Cloſeneſs of the Veſſels may in the large way, be provided for by Covers properly adapted; and, in the ſmall way, by Valves, placed in light Caſks. Theſe Valves will occaſionally give the neceſſary Vent to preſerve the Veſſel, during the Height of the Fermentation; the Veſſel otherwiſe remaining perfectly cloſe, and impervious to the Air.

It is a Miſtake of a very prejudicial Nature, in the Buſineſs of Fermentation, to ſuppoſe, that there is an abſolute Neceſſity for a free Admiſſion of the external Air. The expreſs contrary is the Truth, and very great Advantages will be found by practiſing according to this Suppoſition. A conſtant Influx of the external Air, if it does not carry off ſome Part of the Spirit already generated, yet certainly catches up and diſſipates the fine, ſubtile, or oleaginous and ſaline Particles, whereof the Spirit is made, and thus conſiderably leſſens the Quantity. By a cloſe Fermentation this Inconveniency is avoided; all Air, except that included in the Veſſel, being excluded. The whole Secret conſiſts in leaving a moderate Space for the Air at the Top of the Veſſel, unpoſſeſſed by the Liquor. When the Liquor is once fairly at work to bung it down cloſe, and thus ſuffer it to finiſh the Fermentation, without opening or giving it any more Vent than that afforded it by a proper Valve placed in the Caſk; which, however is not of abſolute Neceſſity, when the empty Space, or rather that poſſeſſed by the Air, is about one tenth of the Gage; the artificial Air, generated in the Operation being then ſeldom ſufficient to open a ſtrong Valve, or at moſt not to endanger the Caſk.

This Method may be practiſed to good Advantage by thoſe whoſe Buſineſs is not very large; but it requires too much Time to be uſed by the large Dealers, who are in a manner forced to admit the free Air, and thus ſuſtain a conſiderable Loſs in their Quantity of Spirit, that the Fermentation may be finiſhed in the ſmall Time allowed for that Purpoſe. It may, however, be ſaid, that the ſilent, ſlow, and almoſt imperceptible vinous Fermentation, is univerſally the moſt perfect and advantageous.

During the whole Courſe of this Operation, the Veſſel ſhould be kept from all external Cold, or conſiderable Heat, in an equal, uniform, and moderate Temperature. In the Winter, a Stove-Room, ſuch as is common in *Germany*, would be very convenient for this Purpoſe; the Veſſel being placed at a proper Diſtance from the Stove: But at other Seaſons no particular Apparatus is neceſſary with us in *England*, if the Place allotted for the Buſineſs be but well defended from the Summer's Heat, and the ill Effects of cold bleak northern Winds.

The Operation is known to be perfected when the hiſſing, or ſmall bubbling Noiſe can be no longer heard, upon applying the Ear to the Veſſel; and alſo by the Liquor itſelf appearing clear to Eye, and having a pungent Sharpneſs on the Tongue. And that it may fully obtain theſe Properties, and be well fitted to yield a pure and perfectly vinous Spirit by Diſtillation, it ſhould be ſuffered to ſtand at reſt in a ſomewhat cooler Place, if practicable, than that in which it was fermented; till it has thoroughly depoſited and cleanſed itſelf of the groſs Lee, and become perfectly tranſparent, vinous and fragrant; in which State it ſhould be committed to the Still, and the Spirit obtained will not only exceed that obtained in the common Way in Quantity, but alſo in Fragrance, Pungency, and Vinoſity.

CHAP. III.

Of Diſtillation in general.

HAVING in the two preceding Chapters laid down the beſt Methods of Brewing and Fermentation, we ſhall now proceed to the Method of Diſtillation.

And in order to lead our Readers methodically through the Path which lies before them, we ſhall begin with explaining the Principles of Diſtillation; or, the Method of extracting the ſpirituous Parts of Bodies.

To extract the Spirits is to cauſe ſuch an Action by Heat, as to cauſe them to aſcend in Vapour from the Bodies which detain them.

If this Heat be natural to Bodies, ſo that the Separation be made without any adventitious Means, it is called Fermentation, which we have already explained.

If it be produced by Fire, or other heating Power, in which the Alembic is placed, it is called Digeſtion, or Diſtillation: Digeſtion, if the Heat only prepares the Materials for the Diſtillation of their Spirits; and Diſtillation, where the Action is of ſufficient Efficacy to cauſe them to aſcend in Vapour, and diſtil.

This Heat is that which puts the inſenſible Parts of a Body, whatever it be, into Motion, divides them, and cauſes a Paſſage for the Spirits incloſed herein, by diſengaging them from the Phlegm and the earthy Particles by which they are incloſed.

Diſtillation conſidered in this Light, is not unworthy the Attention and Countenance of the Learned. This Art is of infinite Extent; whatever the whole Earth produces, Flowers, Fruits, Seeds, Spices, aromatic and vulnerary Plants, odoriferous Drugs, *&c.* are its Objects, and come under its Cognizance; but we generally confine it to Liquids of Taſte and Smell; and to the ſimple and ſpirituous Waters of aromatic and vulnerary Plants. With regard to its Utility, we ſhall omit ſaying any thing here, as we ſhall give ſufficient Proofs of it in the Sequel.

CHAP. IV.

Of particular Diſtillation.

DIſtillation is generally divided into three Kinds; the firſt is called Diſtillation *per aſcenſum*, which is when the Fire, or other Heat, applied to the Alembic, containing the Materials, cauſes the Spirits to aſcend. This is the moſt common, and indeed almoſt the only kind uſed by Diſtillers.

The ſecond is called Diſtillation *per deſcenſum*; which is, when the Fire being placed upon the Veſſel precipitates, or cauſes the Spirit to deſcend. This Kind is hardly ever uſed by Diſtillers, but to obtain the Eſſence or Oil of Cloves.

The third is termed Diſtillation *per latus*, or oblique Diſtillation; but this being uſed only by the Chemiſts we ſhall ſay nothing farther of it here.

With regard to the different Methods of Diſtillation, occaſioned by the different Veſſels, or Materials made uſe of to excite Heat, improperly called Diſtillation; they are of various Kinds, and ſhall be explained as they occur in the Work.

There are various Kinds of Diſtillation, ſome of which ariſe from the different Conſtructions of Alembics; ſuch are the Diſtillation by the common Alembic, with a Refrigeratory, the Glaſs Alembic, the ſerpentine Alembic, and the Retort: Others are produced from the Heat ſurrounding the Alembic; ſuch as the Diſtillation in *Balneum Mariæ*, the Vapor, the Sand, the Dung, and the Lime Baths.

Theſe different Methods of Diſtilling, we ſhall explain in enumerating the Operations in which they are moſt proper; and proceed to treat of the different Forms of Alembics and ther Conſtructions.

CHAP. V.

Of ALEMBICS, *and their different Conſtructions.*

THE Alembic is a Veſſel uſually of Copper tined, which ſerves for, and is eſſential to all Operations in the Diſtillery.

There are ſeveral Sorts of Alembics, all different, either with regard to Matter or Form. As, the common Alembic with a Refrigeratory, the earthern and the glaſs Alembic, the *Balneum Mariæ*, and the Vapour-Bath Alembic.

Every one of theſe being of a different Conſtruction, are alſo uſed in different Operations.

The common Alembic conſiſts principally of two Parts, the lower Part called the Body, and the upper termed the Head.

The Body conſiſts of two Pieces, the lower called the Cucurbit, and the upper the Crown. The Curcubit, or lower Part of the Body, is a kind of Receptacle proportioned to the Size of the Alembic, in which the Bodies to be diſtilled are placed.

The Crown, or upper Part of the Body, is alſo another Part of the Alembic; and is that Part of the Body to which the Head is immediately luted. But an Idea of theſe ſeveral Alembics will be much better attained from the following Figures, which repreſent them much ſtronger to the Imagination than is poſſible to be done by Words.

Fig. 1. Is a common Alembic, as it appears before it is placed in a Furnace, where *a* is the Bottom, *b* the Crown, *c* the Head.

Fig. 2. Is the Body without the Head; *a* the Rim or Top of the Crown where the Head is luted.

Fig. 3. The Head; *a* the Rim where it is to be luted to the Body; *b* the Noſe, or End which is luted into the Worm.

Fig. 4. The Worm, as it appears when out of the Tub in which it is fixed when in uſe; *a* the End into which the Still Head is inſerted, *b* that which conveys the Liquor into the Receiver.

Fig 5. Two Stills at work in one Refrigeratory; *a*, *b* the two Still Heads, *c*, *d* the Bodies incloſed in the Brick-Work; *e*, *e* the two Fire-Places; *f*, *f* the two Aſh-Holes; *g* a Common Receiver; *h* a Spout Receiver, called by Chemiſts a Separating-Glaſs, uſed in the Diſtillation of Herbs, in order to extract their eſſential Oil; *i* a Crane for drawing the Water out of the Refrigeratory.

Fig. 6. A ſmall Still with a Refrigeratory; *a* the Body, *b* the Head, *c* the Refrigeratory filled with Water, *d* the Receiver, luted to the Bec of the Alembic.

Fig. 7. A Glaſs Alembic to be uſed as a *Balneum Mariæ*; *a* the Body, *b* the Head, *c* the Bec, which is to be luted to the Receiver, *d* a Trivet on which it is ſtanding in the Water.

Fig. 8. A proper Receiver for the Glaſs Alembic, called by Chemiſts a Bolt-Head, or Matraſs.

Fig 9. The Glaſs Alembic placed in a Copper Veſſel; *a* the Copper Veſſel filled with Water, *b* the Body of the Glaſs Alembic, *c* the Head, *d* the Receiver luted at *e* to the Bec of the Alembic.

Fig. 10. A cold Still for diſtilling ſimple Waters; *a* the Head, *b* the Bec, or Noſe, *c* the Receiver, *d* the Plate on which Herbs are laid.

Fig. 11. A Veſſel for Digeſtion, called by Chemiſts a Pelican or circulatory Veſſel; *a* the Body, *b* the Head, *c*, *c* two Tubes, luted at *d*, *d*, by which the Liquor returns from the Head into the Body; *e* a Furnace on which it is placed, *f* the Fire-place, *g* the Aſh-hole.

Fig. 12. Another Receiver, uſed when it is neceſſary to lute it to the End of the Worm, in order to prevent the moſt volatile Parts from being evaporated, and loſt.

CHAP.

CHAP. VI.

Of the ACCIDENTS *that too often happen in performing the Proceſſes of* DISTILIATION.

AMONG the Accidents which frequently happen in Diſtilling, the leaſt of all is for the Operation to miſcarry and the Ingredients to be loſt.

And this being a Subject of the greateſt Importance we ſhall treat it with all poſſible Accuracy.

All Accidents are occaſioned by Fire, their primary Cauſe; by want of Attention they get too much Head, and Fear often ſuffers them to become irremediable.

The firſt Accident which may happen by the Fire, is when a Diſtiller, by too great a Heat, cauſes the Ingredients to be burnt at the Bottom of the Still; by this Means his Liquor is ſpoiled by an empereumatic Taſte, and the Tin is melted off from the Alembic. An Empereuma reſembles the Smell of burnt Tobacco, and is produced in Liquors by too great a Degree of Heat. To illuſtrate this, diſtil any Fruit, Flowers, or any Aromatic whatever; but eſpecially ſomething whoſe Smell is very volatile, draw off only the beſt, unlute the Alembic, and what remains in the Still, will be found to have a very diſagreeable Smell; whence it follows, that if a little more had been drawn off, it would have ſpoiled what was before obtained.

If the Fire be too violent, the extraordinary Ebullition of the Contents cauſes them to aſcend into the Head; and, if a Glaſs Alembic, they fall ignited into the Recipient; the Heat breaks it, the Spirits are diſſipated, and often take Fire from the Heat of the Furnace.

If the Fire be too ſtrong, the Bottom of the Still becomes red hot, the Materials inflamed, and conſequently the Fire reaches the Recipient.

When an earthern Alembic is uſed, the cloſeſt Attention is requiſite to keep the Fire from burning the Materials at the Bottom. The Head, which is always of Glaſs, burſts, and the Spirits are ſpilt, and often catch fire. And the Remedy becomes the more difficult, as Earth retains the Fire much longer than a common Alembic.

If the Alembic be not firmly fixed, it is ſoon put out of Order, falls down and unlutes itſelf; thus the Liquor is ſpilt, and the Vapour ſets the Spirits on fire.

If all the Joints be not carefully luted, the Spirits at their firſt Effort iſſue through the leaſt Aperture, run into the Fire, which is propagated into the Alembic by the Vapour.

In Diſtillations where the Phlegm aſcends firſt, its Humidity penetrates the Lute, and looſens it, ſo that when the ſpirituous Vapours aſcend, they are expoſed to the ſame Accident.

Laſtly, when the Recipient is unluted, eſpecially if near full, without the greateſt Circumſpection the Spirits will be ſpilt, and ſo catch Fire.

Hitherto I have only given a ſimple Account of what daily happens to Diſtillers; but the Conſequences of theſe Accidents are infinitely more terrible than the Accidents themſelves; for an Artiſt to loſe his Time, his Labour and Goods, is no ſmall Matter; but it follows from what we have premiſed, that both his Life and Fortune are in danger from theſe Conflagrations. Inſtances of the former are too common, as well as thoſe of the latter, relating to the

Danger to which the Operator is expoſed. They are evident, and we have ſeen very lately three Inſtances ſufficient to intimidate the moſt ſanguine. The Spirits catch, the Alembic and Recipient fly, and the inflamed Vapour becomes preſent Death to all who breathe it.

The Rectifiers, who perform the moſt dangerous Operations of Diſtillery, are particularly expoſed to theſe terrible Accidents; the Fineneſs of the Spirit at the ſame time that it renders it more inflammable, alſo cauſes the Fire to ſpread with the greater Rapidity. And when their Storehouſes are once on fire, they are ſeldom or never ſaved.

Poſſibly I may be cenſured for my Conciſeneſs on this Head; indeed the Importance of it requires the moſt particular Diſcuſſion; but intending to ſpeak of the Methods proper to prevent theſe Accidents, I ſhall cloſe this Chapter, with recommending the Subject of it to the ſerious Reflection of all concerned in Diſtillation. And it being hitherto omitted, though of all others it requires the Attention of the Diſtiller, I ſhall further obſerve, that theſe Operations ſhould never be left to Servants. What can be expected from ignorant Perſons? Fear will ſeize them, when the greateſt Preſence of Mind is requiſite.—— Let us now proceed to the Methods of preventing, or at leaſt leſſening their Effects.

CHAP. VII.

Of the Methods of preventing Accidents.

TO have informed the Reader of the Accidents which happen in Diſtilling, would have been of little Conſequence, without ſhewing, at the ſame Time, the Methods of preventing them. In order therefore to fortify him 'againſt the Terror, which the foregoing Chapter may have excited, we will here point out the Remedies for all the Caſes before ſpecified.

To prevent Accidents, two Things eſpecially muſt be known, and adverted to.

1. The Knowledge of the Fire, which depends on the Fuel, whether Wood or Coal.

2. The Manner of luting ſo as to prevent the Vapours from eſcaping through it, and by that Means of ſetting the whole on fire.

The hardeſt Wood generally makes the quickeſt Fire, ſuch as Beech, Oak, Holm, Elm, *&c.* The white Woods, as the Aſh, the Poplar, the Willow, and the Birch, make a milder Fire. This holds good alſo of the Coal made of theſe two kinds of Wood; and, conſequently, the Nature of the Wood or Coals muſt determine the Fire, and the Action of this muſt be proportioned to the Effect intended to be produced by it. That is, the Capacity of the Alembic, the Matters to be diſtilled, and their Quantity. The ſame may alſo be ſaid of Pit Coal, which is generally uſed in *England*.

It is evident, that the larger the Alembic, the more Fire is neceſſary. What has not been digeſted, alſo, requires more Fire than that which has been prepared by that Operation. Spices require a ſtronger Fire than Flowers; a Diſtillation of Simple Waters more than that of ſpirituous Liquors.

The ſureſt Way of aſcertaining the neceſſary Degree of Fire, is to regulate it by the Materials, as they are more or leſs diſpoſed to yield them Spirits, *&c.* and this is done as follows. The Operator muſt not leave the Alembic, but attentively liſten to what paſſes within, when the Fire begins to heat it. When the Ebulition becomes too vehement, the Fire muſt be leſſened, either by taking out ſome of the Fuel, or covering it with Aſhes or Sand.

It requires a long Experience in the ſeveral Caſes, before a Diſtiller can acquire a competent Knowledge in this important Point. Nor is it poſſible to determine the Degree of Fire from the Quantity of Fuel; Judgment, aſſiſted by Experience, muſt ſupply this Defect.

Every thing being determined with regard to the Degree of Fire, we ſhall now proceed to explain the Method of luting Alembics.

By the Term luting an Alembic, we mean, the cloſing the Joints through which the Spirits might tranſpire.

Lute is a Compoſition of common Aſhes, well ſifted, and ſoaked in Water; Clay, and a kind of Paſte made of Meal or Starch are alſo uſed for this Purpoſe; which, as I before obſerved, is to cloſe all the Joints, *&c.* in order to confine the Spirits from tranſpiring.

Good Luting is one of the ſureſt Methods of preventing Accidents. An Alembic, where all Tranſpiration is prevented, having nothing to fear but the too great Fierceneſs of the Fire; and that may be regulated by the Rules already laid down.

The refrigerating Alembic is moſtly uſed. The Body and the Head are joined to each other; but notwithſtanding the greateſt Care be taken in luting the Juncture, there will ſtill be ſome imperceptable Interſtice for Tranſpiration; and the leaſt being of the greateſt Conſequence, a Piece of ſtrong Paper, ſhould be paſted over the Joint, and the Alembic never left, till the Spirits begin to flow into the Receiver, in order to apply freſh Paper, if the former ſhould contract any Moiſture. The Maſter himſelf ſhould carefully attend to this, and whatever Precaution may have been previouſly uſed, the Eye muſt be conſtantly upon it.

The Alembic, when vinous Spirits are diſtilled, ſhould be luted with Clay, carefully ſpread round the Junctures, in order to prevent all Tranſpiration; becauſe the Conſequences here are terrible; for when the Fire catches a large Quantity, it is often irremediable. Beſides, as this Earth cracks in drying, it muſt be often moiſtened, and freſh applied, on the firſt Appearance of any Occaſion for it.

The Retort is alſo luted with Clay; but as glaſs Retorts are alſo uſed, they are often coated with the ſame Clay, to prevent their melting by the Intenſeneſs of the Fire.

Laſtly, the earthern and glaſs Alembics are luted with Paper and Paſte as above.—— Having thus explained the great Conſequence of Circumſpection with regard to Luting, and the Degree of Fire, we ſhall now proceed to a third Method of preventing them, and cloſe this Chapter with a ſhort Obſervation on portable Furnaces; which is, That Alembics being never thoroughly ſecure on this kind of Furnaces, a Hook ſhould be faſtened to the Refrigerant for fixing it to the Wall.

CHAP. VIII.

Of the Remedies for Accidents, when they happen.

NOtwithſtanding the beſt of Rules, and the ſtricteſt Obſervation, it is impoſſible entirely to prevent Accidents, and therefore it is of no leſs Importance to point out the Remedies on thoſe Occaſions.

The moſt eſſential, are Courage and Preſence of Mind; Fear only increaſing the Misfortune.

1. If the Fire be too violent it muſt be covered, but not ſo as totally to prevent its Action, as by that Means the Proceſs of the Diſtillation would be interrupted, and render it more difficult and leſs perfect.

2. When the Ingredients burn, which you will ſoon diſcover by the Smell, the Fire muſt be immediately put out, in order to prevent the whole Charge of the Still being entirely ſpoiled, which would otherwiſe inevitably be the Conſequence.

3. If the Spirits ſhould catch fire, the firſt care is to unlute immediately the Receiver, and ſtop both the End of the Beak and Mouth of the Receiver with wet Clothes.

The Fire muſt then be put out, and if the Flame iſſued through the Luting, the Joints muſt be cloſed with a wet Cloth, which, together with Water, ſhould never be wanting in a Diſtil-houſe.

4. If the Alembic be of Earth, and the Contents burn at the Bottom, the Fire muſt immediately be put out, the Alembic removed, and Water thrown upon it, till the Danger is over; and, for farther Security, covered with a wet Cloth.

5. If after all your Care in cloſing the Junctures to prevent Tranſpiration, you perceive any thing amiſs, while the Spirits are aſcending, apply Clay, or any other Compoſition, in order to ſtop the Aperture, and have always a wet Cloth ready to ſtifle the Flame, if the Spirits ſhould take fire.

6. If the Heat detaches the Lute, or it becomes moiſt, immediately apply another, having always ready what is neceſſary for performing it. Should the Tranſpiration be ſo violent, that you cannot immediately apply a freſh Lute, clap a wet Cloth round the Joint, and keep it on firm and tight, till the Spirits have taken their Courſe. But if notwithſtanding all your Efforts the Tranſpiration ſhould increaſe, ſo that you fear a Conflagration, remove the Receiver as ſoon as poſſible from the Fire, and afterwards your Alembic, if portable; but if otherwiſe, put out the Fire immediately.

7. The Charge being worked off, be cautious in luting the Receiver, that nothing be ſpilt on the Furnace, and carry it to ſome Diſtance from it, that the Spirits exhaling may not take fire.

8. Laſtly obſerve, that wherever a Remedy is required, there muſt be no Candle

uſed; for the ſpirituous Vapours eaſily take fire, and propagate the Flame to the Veſſels from whence they iſſue.

All that has been hitherto ſaid concerns only the Management of the Alembic; but what remains is ſtill more intereſting, and relates to thoſe who work it, that they may not, by conquering the Accident, deſtroy themſelves.

On diſcovering any of the above Accidents, when the Flame has not yet reached the Spirits, let the Remedies already mentioned be applied, either with regard to the Lute, or the Violence of the Fire.

But if the Flame has reached the Alembic, the following Precautions are to be uſed.

The Operator muſt not approach the Alembic without a wet Cloth over his Mouth and Noſtrils, it being immediate Death to inhale the inflamed Vapour.

In haſtening to ſtop any Accident, be careful to approach the Side oppoſite to that whither the Air impels the Flame; for, without this Precaution you would be involved in it, and could not, without the utmoſt Difficulty, extricate yourſelf from it.

If notwithſtanding this Precaution, the Eddy of the Air ſhould force the Flame to your Side, quit the Place immediately, and do not return till its Direction be changed, always taking care to have a wet linen Cloth before your Noſe and Mouth, and keep yourſelf on the Side oppoſite to the Direction of the Flame: And alſo to have another ſuch Cloth, in order to ſmother the Flame, and cloſe the Creviſe through which the Spirits iſſue.

Should it be your Misfortune to be covered with inflamed Spirits, wrap yourſelf in a wet Sheet, which ſhould be always ready for that Purpoſe. Self-Preſervation is of too great Importance that any of theſe Precautions ſhould be omitted in ſuch Variety of Dangers.

If the Fire has acquired ſuch a Head that it cannot be ſtopt, the Receiver muſt be broke, and the Alembic, if portable, thrown down; but no Perſon muſt be ſuffered to go near them, eſpecially thoſe who are Strangers to the Buſineſs.

In a deſperate Caſe, like that of a large Quantity of rectified Spirit taking Fire, if Time permit, the Communication of the Beak of the Alembic with the Recipient, which is uſually a Caſk, muſt be cut off, by cloſely ſtopping the Bung; and be ſure no Candle come near the Receiver, leaving the reſt, as the Danger would be too great to expoſe ones ſelf to the Flames of a large Charge, and the Diſtiller's Safety ſhould be principally conſidered.

I thought it my Duty to give my Reader theſe Informations, and hope that in the Practice of Diſtillation, he will find them of great Advantage.

CHAP. IX.

On the Neceſſity of often cooling the Alembic, as another Means of preventing Accidents.

THE Refrigerant is ſo eſſential a Part of the Alembic, that for want of it ſeveral other Expedients are made uſe of to perform its Office, for cooling thoſe whoſe Capacity, Brittleneſs, or laſtly the Conſtruction, will not admit of their having any.

The Refrigerant is uſually in proportion to the Capacity of the Alembic, for which the following may ſerve as a Rule, that the Capacity of the Refrigerant ſhould be to that of the Alembic, as 14 to 8.

The Neceſſity of cooling the Head of the Alembic is ſelf-evident to all who have the leaſt Knowledge of Diſtillation, as it condenſes the Spirits, cools them, and cauſes them to flow into the Receiver, which, if of Glaſs, would otherwiſe be broken by the Heat; and conſequently ſerves to prevent Conflagrations.

The Alembics of the *Balneum Mariæ*, and the Vapour Bath, ought alſo to have Refrigerants, like the common Alembic, unleſs they are of Glaſs.

Thoſe of Earth and Glaſs are cooled, as we have already obſerved, with a wet Cloth, which is alſo uſed to cool the Head of other kinds of Alembics. But it is not difficult to contrive one which may be placed in a Refrigerant; ſuch as the following.

To a common ſmall Still apply and lute a Worm, or long tin or pewter Tube, forming ſeveral Circumvolutions, of the ſame Circumference with the Body, in order to give it ſome Elevation, place this Worm in a Refrigerant, proportioned to the Alembic. If the Capacity of this Alembic ſhould make it bear too much on the Neck of the Matraſs, it may be ſupported by a Trevit of the ſame Circumference as the Body itſelf: The Extremity of the Worm may have a Beak projecting beyond the Side of the Refrigerant, for conveying the Spirits into the Receiver.

This Apparatus will be attended with little Expence, will ſave the Diſtiller the Trouble of being perpetually cooling the Head of the Alembic, and is ſuch a Safeguard againſt Accidents, that if the Worm be well luted, nothing need be apprehended but from the Violence of the Fire.

This Method of Practice, therefore, is productive of three valuable Particulars: The firſt is, that by cooling the Spirits it preſerves the Receiver, and obviates the Accidents ariſing from their Heat. The ſecond is, that the Spirits being kept in a moderate Heat, the Tranſpiration is leſs, and conſequently the Spirits procured by the Operation have more Taſte, Smell and Fragrancy than they would otherwiſe have had.

Experience demonſtrates, that when the Spirits flow hot into the Receiver, however attentive the Diſtiller may be to lute the Junctures of the Alembic, there will be a very ſenſible Evaporation, which even in ſimple Waters greatly depreciates the Goodneſs of the Liquor.

Laſtly, the third is, that the Cooling of Alembics is what principally contributes to the Perfection of the Operation; becauſe the Coolneſs of the Head precipitates the Phlegm, and in the Caſe of too great a Degree of Fire, and where the Ebullition is too vehement, if after taking away Part of the Fire, or covering it, the Ebullition ſhould continue, the Head may be cooled with a wet Cloth, till the Ebullition is reduced.

As there is a Neceſſity of cooling the Alembic, ſo what we have ſaid cannot be too carefully obſerved. In fine, the Contraſt of Cold and Heat, equally concurring, but by Methods directly oppoſite, to the ſame Proceſs, and the Perfection of the Diſtillation, is a Phœnomenon, which deſerves the Attention of all who ſtudy the Operations of Nature.

CHAP. X.

Of the Neceſſity of putting Water into the Alembic, for ſeveral Diſtillations.

TWO principal Advantages attend putting Water into the Alembic. The firſt is, to prevent the Loſs the Diſtiller would incur without that Precaution, and ſo prevent any Alteration in the Liquor procured by Diſtillation. This we ſhall illuſtrate by an Example. Suppoſe a Diſtiller ſhould attempt to rectify Spirits of Wine, without putting Water in the Alembic. It is evident, that the Fire will conſume Part of it, which is entirely loſs, becauſe the ſame Quantity of Spirit cannot be procured from it, which might, had there been any thing to moderate the Action of the Fire, which now preyed upon it.

Secondly, If Liquors are impregnated with ſtrong Ingredients, eſpecially Seeds, and the Quantity be ſufficient to abſorb all the Phlegm, a great Quantity of Spirit muſt be left in the Still, or the Ingredients will burn, and the Spirits contract an empreumatic Taſte, which is the more detrimental to the Spirit, as it is increaſed by Age.

Thirdly, If no Water be put into the Alembic with the Ingredients, the Spirit will be rendered finer by them, and the Fire, if ever ſo little too ſtrong, will cauſe the Ingredients to burn, and the Spirits to contract an Empyreuma ; a Misfortune eaſily prevented by this Precaution.

Thus it is a Safe-guard againſt Accidents : But beſides, Water being mixed with the Ingredients, they are at once prevented from burning, and the Spirit not weakened ; for no ſooner are the Ingredients put in Motion by the Fire, than the Spirits immediately aſcend, and the Liquor loſes nothing of its Quality, provided the Receiver be removed as ſoon as the Phelegm begins to aſcend.

The Water therefore prevents the Waſte of the Spirits, and thus the Diſtiller loſes nothing of his Goods; whereas, without Water, the Spirits by impregnating the Materials, their Quantity muſt be leſs. With regard to the Phlegm, there is no Difficulty in finding when it begins to aſcend, the firſt Drop being cloudy, and when it has continued dropping for ſome time, it is perceived by a milky Caſt at the Bottom of the Receiver.

Laſtly, The Diſtiller is no Loſer with regard to the Quality of his Liquor, which is not at all weakened thereby. Thus it is attended with the two capital Advantages, the Profit of the Diſtiller, and the Perfection of the Liquor. Let us now proceed to the different Manners of Diſtillation.

CHAP. XI.

Of the particular Advantages attending every kind of Diſtillation.

IN the third Chapter we mentioned the ſeveral kinds of Diſtillation, we ſhall here enlarge on the particular Advantages of each, and in what Circumſtances each is to be uſed.

In order for Diſtillation, the Alembic muſt be charged with Materials, and placed on a Fire, or Subſtances capable of producing the ſame Effect.

The Method of Diſtilling with the common refrigerant Alembic.

This Method of Diſtilling is the moſt generally uſed, being one of the moſt ſpeedy and profitable, as it requires fewer Preparatives, and leſs Time.

To diſtil with the common Alembic, the Body of it muſt be thoroughly cleanſed, that no Taſte or Smell of any preceding Materials may remain. The Materials are then to be put into the Alembic; but care muſt be taken that the Alembic be not above half full, in order that the Materials may have ſufficient Room to move, without choaking the Neck of the Alembic. The ſame Care muſt be taken with regard to the Head, it muſt be thoroughly cleanſed and dried; for it often happens that ſome ſmall Quantity of Water is left in the Rim, which renders the firſt Spirits foul, and, by endeavouring to ſeparate it from the other, ſome, and that the moſt volatile Part of the Spirit, will be loſt.

After this the two Parts of the Alembic are to be carefully luted with ſtrong brown Paper, well paſted on, and the Noſe of the Alembic luted to the Worm; after which the Fire ſhould be immediately made under the Still, leſt too long an Infuſion ſhould prejudice the Liquor.

This Alembic being worked on an open Fire, the Operation is quicker than any other; but the Degree of Fire requires a very cloſe Attention; as a different Management is neceſſary to different Materials. The Water of the Refrigeratory muſt be changed from time to time, and if the Caſe requires it, the whole Head, but eſpecially the Bec, muſt be kept cold.

Of Diſtillation in Sand, and in what Caſes it ſhould be uſed.

This Species of Diſtillation is performed in two different Manners. Firſt, by covering the Fire with Sand or Aſhes, and placing the Alembic upon it. This Method is very neceſſary in Digeſtion, and for the perfect Rectification of Spirits. Sand is abſolutely neceſſary for moderating the Action of the Fire, when there is Reaſon to fear the Matter contained in the Bottom of the Alembic will burn.

The ſecond Method of Sand Diſtillation, is to take the fineſt River Sand, and after thoroughly waſhing it, put into the Alembic a Quantity ſufficient to cover it three Fingers deep; after which the Still is to be charged with the Ingredients to be diſtilled. This ſerves inſtead of Water in certain Caſes, where the Uſe of it would prejudice the Ingredients; as in the fine ſpirituous Waters impregnated with the aromatic Parts of Flowers; the Sand preventing the Ingredients from burning. It is alſo neceſſary in diſtilling rectified Spirits from Seeds.

This Operation being finiſhed, the Alembic muſt be thoroughly cleanſed from the Sand, that the Taſte or Smell contained therein, be not communicated to any other Charge of different Ingredients.

Of Diſtilling in Balneum Mariæ, *and its Advantages.*

This Method of Diſtillation is of great Uſe in ſeveral Caſes. Its Operation is more perfect, and is ſubject to few, if any of thoſe Accidents attending Diſtillations on an open Fire.

In diſtilling ſweet-ſcented Waters from Flowers, aromatic Plants, and others of that kind, where neither Water, nor Spirit ought to be mixed with them, there is an abſolute Neceſſity for uſing the *Balneum Mariæ* ; as by every other Diſtillation, on an open Fire, the Ingredients would infallibly burn.

If Sand ſhould be made uſe of, the Fire would melt the Tin from the Alembic, and the Contents be in the utmoſt Danger of being burnt.

In diſtilling in *Balneum Mariæ*, a glaſs Alembic is generally uſed. This Alembic is to be placed in a Copper Veſſel filled with Water. This Veſſel ought at leaſt to be of half the Height of the Alembic : at the Bottom of the Copper Veſſel muſt be a Trivet on which the Alembic is to be placed, that it may not touch the Bottom of the Copper, becauſe when the Water begins to boil, it diſperſes itſelf towards the Sides, and leaving the Bottom dry, the Ingredients would be in danger of burning.

The Uſe of the *Balneum Mariæ* is excellent for thoſe Ingredients which require little Spirit ; but if a Copper Alembic be uſed, be ſure to place Sand at the Bottom, that the diſtilled Liquor may not contract any ill Taſte or Smell. This Method is alſo adviſeable in the Rectification of Spirits, on Account of the Danger attending this Operation when performed on a naked Fire.

Were this Method of Diſtillation as expeditious as that performed on a naked Fire, no other ought to be uſed, becauſe it is ſubject to no Accidents, and at the ſame Time the Spirit, *&c.* diſtilled is much more fragrant and grateful.

In what Caſes glaſs, or earthen Alembics are to be uſed; their Advantages and Diſadvantages.

In the Chapter relating to Accidents, we have mentioned the earthen Alembic; we muſt now add, that it ought never to be uſed, except the Matter to be diſtilled have a ſtrong and bad Smell, and then ſeldom above once, unleſs it be for Ingredients of the ſame or ſimilar Qualities.

This Alembic being very difficult to be managed, we can only recommend it in the Caſe above-mentioned.

As a naked Fire is generally applied to this Alembic, it requires a Furnace where the Fire may be gradually increaſed, on account of the Accidents to which it is liable.

The glaſs Alembic is more eaſily managed, as it is generally placed in a *Balneum Mariæ*. Its principal Uſe is for diſtilling Waters from Flowers, and making Quinteſſences; and were it not for the Length of the Operation, it would be preferable to any other Method.

This Alembic hardly admitting of a Refrigerant, a wet linen Cloth muſt be placed on the Head, and often changed.

The Receiver of this Alembic muſt not be very large, becauſe of the Fragility of the Bec; but if it were ever ſo little bent into a Curve, the Largeneſs of the Receiver would be of no Prejudice; becauſe then its whole Weight would be ſupported by its Stand.

Advantages of Diſtillation performed by the Vapour Bath.

This Method differs very little from the *Balneum Mariæ*, and is uſed nearly in the ſame Circumſtances; but has greatly the Advantage of the *Balneum Mariæ* in the Quickneſs of the Operation. And *Lemery*, in the firſt Part of his Courſe of Chemiſtry, affirms its Operation to be more perfect.

However that be, its Uſe is equal to that of the *Balneum Mariæ*; but in diſtilling ſweet-ſcented Waters, or Flowers, Sand muſt be placed at the Bottom, that the Liquor may not contract a Taſte from the Copper.

Caſes where Dung, Husks of Grapes, and Lime, are to be uſed.

Theſe Subſtances are rarely uſed except in Digeſtions; and therefore of no great Uſe to Diſtillers, they uſing only hot Aſhes, or a Fire well covered for that Purpoſe.

If Dung be uſed it muſt be of the hotteſt kind, *viz.* that of the Horſe or Sheep, and the Quantity proportioned to the Heat intended. The Lime muſt be quick; and if the Heat required be moderate, Lime which has lain ſome time in the Air muſt be uſed. The ſame is to be obſerved with regard to the Huſks of Grapes. But in whatever manner theſe are uſed, the Digeſtions muſt be performed in a cloſe covered Veſſel.

CHAP. XII.

Of Bodies proper for Diſtillation.

THIS Chapter alone might make a Volume, were we to make a particular Enumeration of all its Parts; but, as we have already obſerved, we ſhall confine ourſelves to the Diſtillation of ſimple and compound Waters, *&c.*

If we acquit ourſelves to the Satisfaction of the Public, we ſhall enjoy the Pleaſure of having treated of one Part entirely new; and, indeed, the only one that has been overlooked.

The Bodies proper for Diſtillation, are Flowers, Fruits, Seeds, Spices and aromatic Plants.

By Diſtillation and Digeſtion, we extract the Colour and Smell of Flowers in ſimple Waters and Eſſences.

We extract from Fruits, at leaſt from ſome, Colour, Taſte, *&c.*

From aromatic Plants, the Diſtiller draws Spirits, Eſſences, ſimple and compound Waters.

From Spices are procured Eſſences, or in the Language of the Chemiſts, Oils, and Perfumes, and alſo pure Spirits.

From Seeds or Berries are drawn ſimple Waters, pure Spirits; and from ſome, as thoſe of Aniſe, Fennel, and Juniper, Oil.

The Colour of Flowers is extracted by Infuſion, and likewiſe by Digeſtion in Brandy or Spirit of Wine: The Smell is extracted by Diſtillation; the ſimple Water with Brandy or Spirit of Wine.

What is extracted of the Colour of Flowers, by Infuſion in Water by a gentle Heat, or by Digeſtion in Brandy or Spirits of Wine, is called, in the Diſtiller's Phraſe, Tincture of Flowers.

The Colour of Fruits is extracted in the ſame manner, either by Infuſion or Digeſtion: Their Taſte is alſo procured by the ſame Proceſſes. But let it be obſerved, that the Time of theſe Operations muſt be limited; for otherwiſe the Fruit, after Fermentation, would render it acid. The Taſte is alſo extracted by Diſtillation in Spirit of Wine.

From aromatic Plants are extracted by the Alembic pure Spirits, Odours, and ſimple Waters. But theſe require different Methods of Diſtillation. The firſt by Water or Brandy only, the ſecond by rectified Spirit, which will give them the greateſt Excellency they are capable of.

The Plants themſelves with their Flowers may alſo be diſtilled, which is ſtill better.

From Spices are drawn Spirits, and oily or ſpirituous Quinteſſences. The Spirits are drawn by Brandy, or Spirit of Wine, with very little Water: The Oils are diſtilled *per Deſcenſum*; and the ſpirituous Quinteſſences by pounding the Spices, and after infuſing them in Spirit of Wine, decanting it gently by Inclination.

From Seeds are extracted ſimple Waters, Spirits and Oils. Very few of the firſt and laſt, Spirits being what is generally extracted from Seeds and Berries.

Some Diſtillers, through a Notion of Frugality, diſtil Seeds with Water; but their Liquors are not to be compared with thoſe which are diſtilled with Spirits. When Oils are drawn from Seeds, the Operation is performed either by the *Balneum Mariæ*, or the Vapour Bath.

We only deliver in this Place, the firſt Elements of each of theſe Operations, which will be farther illuſtrated in the Sequel, when we treat more particularly of theſe Subjects.

CHAP. XIII.

Of what is procured by Diſtillation.

BY Diſtillation are procured Spirit, Eſſence, ſimple Waters and Phlegm.

Spirits are very difficult to be defined. I conſider them as the moſt ſubtil and volatile Parts of a Body.

All Bodies without Exception have Spirits more or leſs.

Theſe Parts are an ignited Subſtance, and conſequently by their own Nature diſpoſed to a violent Motion.

Theſe volatile Particles are more or leſs diſpoſed to ſeparate themſelves, as the Bodies are more or leſs porous, or abound with a greater or leſſer Quantity of Oil.

By the Term *Eſſence*, we underſtand the oleaginous Parts of a Body. An eſſential

Oil is found in all Bodies, being one of their conſtituent Principles. I have obſerved in all my Diſtillations, Spirit of Wine excepted, a ſoft unctuous Subſtance floating on the Phlegm; and this Subſtance is Oil, which we call Eſſence; and this is what we endeavour to extract.

Simple Waters are thoſe diſtilled from Plants, Flowers, *&c.* without the Help of Water, Brandy, or Spirit of Wine. Theſe Waters are commonly odoriferous, containing the Odour of the Body from whence it is extracted, and even exceeds in Smell the Body itſelf.

Phlegm is the aqueous Particles of Bodies; but whether an active or paſſive Principle, we ſhall leave to the Deciſion of Chemiſts.

It is of the laſt Importance to a Diſtiller to be well acquainted with its Nature; many miſtaking for Phlegm ſeveral white and clouded Drops, which firſt fall into the Receiver, when the Still begins to work. Theſe, however, are often the moſt ſpirituous Particles of the Matter in the Alembic, and conſequently ought to be preſerved. What has given occaſion to this Miſtake, is ſome Humidity remaining in the Head, *&c.* of the Alembic. And had it been thoroughly wiped, the firſt Drops would have been equally bright with any during the whole Operation.

The following Remark deſerves Attention. In Bodies that have been digeſted the Spirits aſcend firſt; whereas in Charges not digeſted, the Phlegm aſcends before the Spirits. The Reaſon of this is very plain and natural.

In Subſtances previouſly digeſted, the Action of the Fire no ſooner cauſes the Matter in the Alembic to boil, than the Spirits, being the moſt volatile Parts, detach themſelves, and aſcend into the Head of the Alembic. But when the Matter to be diſtilled has not undergone a proper Digeſtion, the Spirits being intangled in the Phlegm, are leſs diſpoſed to aſcend, till the Phlegm itſelf ſeparates, and gives them room to fly upward. The Phlegm being aqueous riſes firſt: This is more particularly obſervable in Spices. I am, however, inclined to believe, that were the Operation performed in an Alembic, whoſe Head was at a great Diſtance from the Surface of the Charge, they would not aſcend high enough to come over the Helm, but fall back again by their own Gravity, and by that means leave the Spirits at Liberty to aſcend. But in the common Refrigatory Alembic this always happens.

If this Obſervation be not readily admitted, I appeal to Experience, which I deſire may be the Teſt of every thing I ſhall advance.

Another Obſervation, which has verified the above Aſſertion by innumerable Inſtances, is, that in an extraordinary Run of Buſineſs, when I had not time ſufficient to digeſt the Subſtances, I uſed to bruiſe them in a Mortar; but notwithſtanding the Trituration, the Phlegm firſt came over, and afterwards the Spirits. But I deſire to be underſtood, that I ſpeak here only of the volatile Parts of the Plants not drawn with vinous Spirits, but contained in a ſimple Water.

Another Remark I muſt add, and which I hope will be acceptable to the Curious, as it has not yet been made public, though doubtleſs the Obſervation has often occurred to others; it is this: That in mixed Charges, conſiſting of Flowers, Fruits, and aromatic Plants, put into the Alembic without a previous Digeſtion, the Spirits of the Flowers aſcend firſt; and notwithſtanding the Mixture, they contracted nothing of the Smell or Taſte of the Fruits and Plants. Next after the Spirits of the Flowers, thoſe of the Fruits aſcend, not in the leaſt impregnated with the Smell or Taſte of either of the

Flowers or Plants. And in the laſt Place the Spirits of the Plants diſtil no leſs neat than the former. Should this appear ſtrange to any one, Experience will convince him of the Truth.

Another Obſervation I have made on aromatic Herbs, is, that whether they are, or are not digeſted; whether the Spirits or Phlegm aſcend firſt; the Spirits contain very little of the Taſte and Smell of the Plants from whence they were extracted; and I have always been obliged to put to theſe Spirits a greater or leſſer Quantity of the Phlegm, in order to give the Spirits I had drawn the Taſte of an aromatic Odour of the Plants; the Phlegm containing the greateſt Quantity of both.

This Obſervation I inſert as of great Uſe to thoſe who practiſe Diſtillation.

As the Term Digeſtion often occurs in this Eſſay, I cannot avoid pointing out its Advantages, and even ſhew the Neceſſity of uſing it in ſeveral Circumſtances.

Subſtances are ſaid to be in Digeſtion, when they are infuſed in a Menſtruum, over a very ſlow Fire. This Preparation is often neceſſary in Diſtillation; for it tends to open the Bodies, and thereby free the Spirits from their Confinements, whereby they are the better enabled to aſcend.

Cold Digeſtions are the beſt; thoſe made by Fire, or in hot Materials, diminiſh the Quality of the Goods, as ſome Part, as the moſt volatile, will be loſt.

In order to procure Eſſences, the Bodies muſt be prepared by Digeſtion. It is even of abſolute Neceſſity for extracting the Spirits and Eſſences of Spices.

CHAP. XIV.

Of the proper Seaſon for Diſtilling.

FLOWERS of all Kinds muſt be diſtilled in their proper Seaſons. To begin with the Violet. Its Colour and Smell can only be extracted when it is in its greateſt Vigour, which is not at its firſt Appearance, nor when it begins to decay. *April* is the Month in which it is in its greateſt Perfection; the Seaſon being never ſo forward in *March*, as to give the Violet its whole Fragrancy.

The ſame muſt be obſerved of all other Flowers. And let them be gathered at the hotteſt Time of the Day; the Odour and

Fragrancy of Flowers being then in their greateſt Perfection.

The ſame Obſervation holds good, with regard to Fruits; to which muſt be added, that they are the fineſt, and of the moſt beautiful Colour, eſpecially thoſe from whence Tinctures are drawn; they muſt be free from all Defects, as the Goods would by that Means be greatly detrimented.

Berries and Aromatics may be diſtilled at any Seaſon, all that is neceſſary being a good Choice. But in this Diſtillers are ſometimes miſtaken, as may eaſily happen without a very accurate Knowledge. We ſhall therefore, in the Sequel, lay down more particular Directions for making a proper Choice of Materials.

CHAP. XV.

Of the Filtration of Liquors.

Filtration conſiſts in paſſing Liquors thro' ſome porous Subſtance, in order to free them from thoſe Particles which obſcure their Brightneſs.

Nothing is finer than a Liquor newly diſtilled; but the Syrup and colouring Particles render it thick and opaque; in order, therefore, to reſtore their Brightneſs they are filtrated, which is done by paſſing them through Sand, Paper, Cloth, *&c.*

All the Attention of the Diſtiller cannot in ordinary Operations always prevent ſome aqueous Particles from riſing with the Spirits, either in the Beginning of the Proceſs, in thoſe Compoſitions where they aſcend firſt, or at the Concluſion when they riſe laſt. As this is almoſt unavoidable, ſo it is alſo ſometimes neceſſary.

In diſtilling Flowers, or aromatic Plants, freſh gathered, the Phlegm riſes firſt; and this Part cannot be taken out of the Receiver without depriving the Spirits of a conſiderable Part of their Fragrancy.

In diſtilling Spices, their Odour being more entangled, will remain in the Alembic till Part of the Phlegm is drawn off. But when, inſtead of theſe Subſtances, their Quinteſſences are uſed, the Neceſſity ceaſes. But the Phlegm commonly cauſing a Cloudineſs in the Liquor, it may be rendered tolerably fine, by pouring it gently off by Inclination, without the Trouble of Filtration, the aqueous Particles, by their Gravity, falling to the Bottom. But to render it entirely bright and fine, put ſome Cotton in a Funnel, and pour the Liquor thro' it, by which means the aqueous Particles will be retained in the Cotton. You muſt however remember to cover the Top of the Funnel, to prevent the moſt volatile Parts of the Spirits from evaporating.

CHAP. XVI.

Of the Diſtillation of Malt Spirits.

THE Waſh, or Liquor being prepared by Brewing and Fermentation, as directed in the firſt and ſecond Chapters of this Treatiſe, the Still is to be charged with it, and worked off with a pretty briſk Fire. But it ſhould be obſerved, that the only Apparatus uſed in this Proceſs, is the Alembic with a Refrigeratory, as repreſented in *Fig.* 1.

The Waſh being of a mucilaginous Nature, a particular Management is neceſſary to prevent its burning, and cauſe it to work kindly in the Still: If it ſhould happen to be burnt in the Operation, the Spirit will have a moſt diſagreeable Flavour, which can hardly ever be removed; and therefore to prevent this ill Effect, the Waſh ſhould be made dilute or thin, the Fire well regulated, and the whole kept in a continual Agitation during the whole Proceſs. The moſt judicious Diſtillers always take care to have their Waſh ſufficiently diluted, and conſtantly find their Spirit the purer for it. With regard to the Fire, it may be eaſily kept regular by a conſtant Attendance, and obſerving never to ſtir it haſtily, or throw on freſh Fuel; and the ſtirring of the Liquor in the Still is to be effected by Means of a Paddle, or Bar kept in the Liquor till it juſt begins to boil, which is the Time for luting on the Head; and after which there is no great Danger, but from the improper Management of the Fire: This is the common Way; but it is no eaſy Matter to hit the exact Time, and the doing it either too late, or too ſoon, is attended with great Inconvenience, ſo that ſeveral have diſcovered other Methods; ſome put more ſolid Bodies into the the Still with the Waſh; others place ſome proper Matter at the Bottom and Sides of the Still, which are the Places where the Fire acts with the greateſt Force.

The Uſe of the Paddle would, however, anſwer better than either of theſe Methods, could it be continued during the whole Time the Still is working; and this may be done by the following Method: Let a ſhort Tube of Iron or Copper be ſoldered in the Center of the Still-head, and let a croſs Bar be placed below in the ſame Head, with a Hole in the Middle, correſponding to that at the Top; through both theſe let an iron Pipe be carried down in the Still, and let an iron Rod be paſſed through this with wooden Sweeps at its End; this Rod may be continually worked by a Winch at the Still-head, and the Sweeps will continually keep the Bottom and Sides ſcraped clean, the Interſtices of the Tube being all the time well crammed with Tow to prevent any Evaporation of the Spirit.

The ſame Effect may, in a great Meaſure, be produced by a leſs laborious Method, namely, by placing a Parcel of cylindrical Sticks lengthways, ſo as to cover the whole Bottom of the Still, or by throwing in a looſe Parcel of Faggot Sticks at a Venture; for the Action of the Fire below moving the Liquor, at the ſame time gives Motion to the Sticks, making them act continually like a Parcel of Stirrers upon the Bottom and Sides of the Still, which might, if neceſſary, be furniſhed with Buttons and Loops, to prevent them from ſtarting. Some alſo uſe a Parcel of fine Hay laid upon the looſe Sticks, and ſecured down by two croſs Poles, laid from Side to Side, and in the ſame Manner faſtened down with Loops. Care is to be taken in this Caſe not to preſs the Hay againſt the Sides of the Still; for that would ſcorch nearly as ſoon as the Waſh itſelf; but the Sticks never will: Theſe are ſimple but effectual Contrivances, and in point of Elegance, they may be improved at Pleaſure.

There is another Inconvenience attending the diſtilling of Malt Spirit, which is, when all the Bottoms, or groſs mealy Fœculence is put into the Still along with the Liquor, the thinner Part of the Waſh going off in Form of Spirit; the mealy Maſs grows by Degrees more and more ſtiff, ſo as to ſcorch towards the latter Part of the Operation. The beſt Method of remedying this is to have a Pipe with a Stop-cock, leading from the upper Part of the Worm-tub into the Still; ſo that upon a half, or a quarter Turn, it may continually ſupply a little Stream of hot Water, in the ſame Proportion as the Spirit runs off, by which Means the Danger of ſcorching is avoided, and the Operation, at the ſame time, not in the leaſt retarded.

In *Holland*, the Malt Diſtillers work all their Waſh thick, with the whole Body of Meal among it; yet they are ſo careful in keeping their Stills clean, and ſo regular and nice in the Management of their Fires, that though they uſe no Artifice at all on this Head, only to charge the Still while it is hot and moiſt, they very rarely have the Misfortune to ſcorch, except now and then in the Depth of Winter. When ſuch an Accident has once happened in a Still, they are extremely careful to ſcrape, ſcrub and ſcour off the Remains of the burnt Matter, otherwiſe they find the ſame Accident very liable to happen again in the ſame Place. But beyond all the other Methods in Uſe on this Occaſion, would be the working the Stills not by a dry Heat, but in a *Balneum Mariæ*, which might poſſibly be ſo contrived by the Baſon being large, and capable of working a great many Stills at once, as to be extremely worth the Proprietor's while in all reſpects.

Another Requiſite to be obſerved is, that the Water in the Worm-tub be kept cool; this may be affected, by placing in the middle of the Tub a wooden Pipe or Gutter, about three Inches ſquare within, reaching from the Top almoſt to the Bottom; by this Contrivance cold Water may, as often as neceſſary, be conveyed to the Bottom of the Worm-tub, and the hot Water at the Top forced either over the Sides of the Tub, or, which is better, through a leaden Pipe of moderate Size, called a Waſte-pipe, ſoldered into the Top of the Tub, and extended to the Gutter formed to carry away the Water.

CHAP. XVII.

Of the Diſtillation of Moloſſes Spirits.

THE Spirit diſtilled from Moloſſes or Treacle, is very clean or pure. It is made from common Treacle diſſolved in Water, and fermented in the ſame Manner as the Waſh for the common Malt Spirit.

But if ſome particular Art is not uſed in Diſtilling this Spirit, it will not prove ſo vinous as Malt Spirit, but more flat and leſs pungent and acid, though otherwiſe much cleaner taſted, as its eſſential Oil is of a leſs offenſive Flavour. Therefore, if good freſh Wine-lees, abounding in Tartar, be added and duly fermented with the Moloſſes, the Spirit will acquire a much greater Vinoſity and Briſkneſs, and approach much nearer to the Nature of foreign Spirits.

Where the Moloſſes Spirit is brought to the common Proof Strength, if it be found not to have a ſufficient Vinoſity, it will be very proper to add ſome good dulcified Spirit of Nitre; and if the Spirit be clean worked, it may, by this Addition only, be made to paſs on ordinary Judges for *French* Brandy.

Great Quantities of this Spirit are uſed in adulterating foreign Brandy, Rum and Arrac. Much of it is alſo uſed alone in making Cherry-Brandy, and other Drams by Infuſion; in all which many, and perhaps with Juſtice, prefer it to foreign Brandies.

Moloſſes, like other Spirits, is entirely colourleſs when firſt extracted; but Diſtillers always give it, as nearly as poſſible, the Colour of foreign Spirits; the Methods of performing which we ſhall explain in a ſubſequent Chapter.

CHAP. XVIII.

Of the Nature of Brandies, and Method of diſtilling them in France.

THE general Method of diſtilling Brandies in *France* need not be formally deſcribed, as it differs in nothing from that commonly practiſed here in working from Waſh or Moloſſes; nor are they in the leaſt more cleanly, or exact in the Operation.

They only obſerve more particularly to throw a little of the natural Lee into the Still, along with the Wine, as finding this gives their Spirit the Flavour, for which it is generally admired abroad.

But though Brandy is extracted from Wine, Experience tells us, that there is a great Difference in Grapes from which the Wine is made. Every Soil, every Climate, every kind of Grapes varies with regard to the Quantity and Quality of Spirits extracted from them. There are ſome Grapes which are only fit for eating; others for drying; as thoſe of *Damaſcus*, *Corinth*, *Provence*, and *Avignon*; but not fit to make Wine.

Some Wines very proper for Diſtillation, others much leſs ſo. The Wines of *Languedoc* and *Provence* afford a great deal of Brandy by Diſtillation, when the Operation is made in their full Strength: The *Orleans* Wines, and thoſe of *Blois* afford yet more; but the beſt are thoſe of the Territories of *Cogniac* and of *Andaye*, which are however in the Number of thoſe the leaſt drank in *France*. Whereas thoſe of *Burgundy* and of *Champaign*, though of a very fine Flavour, are improper, becauſe they yield but very little in Diſtillation.

It muſt alſo be farther obſerved, that all the Wines for Diſtillation, as thoſe of *Spain*, the *Canaries*, of *Alicant*, of *Cyprus*, of St. *Perés*, of *Toquet*, of *Grave*, of *Hungary*, and others of the ſame kind, yield very little Brandy by Diſtillation; and conſequently would coſt the Diſtiller conſiderably more than he could ſell it for. What is drawn from them is indeed very good, always retaining the ſaccharine Quality, and rich Flavour of the Wine from whence it is drawn; but as it grows old, this Flavour often grows aromatic, and is not agreeable to all Palates.

Hence we ſee, that Brandies always differ, according as they are extracted from different Species of Grapes. Nor would there be ſo great a Similarity as there is between the different kinds of *French* Brandies, were the ſtrongeſt Wines uſed for this Purpoſe: But this is rarely the Caſe, the weakeſt and loweſt-flavoured Wines only are diſtilled for their Spirit, or ſuch as prove abſolutely unfit for any other Uſe.

A large Quantity of Brandies is diſtilled in *France* during the Time of the Vintage; for all thoſe poor Grapes that prove unfit for Wine, are uſually firſt gathered, preſſed, their Juice fermented, and directly diſtilled. This rids their Hands of their poor Wines at once, and leaves their Caſks empty for the Reception of better. It is a general Rule with them not to diſtil any Wine, that will fetch any Price as Wine; for, in this

State, the Profits upon them are vaſtly greater than when reduced to Brandies. This large Stock of ſmall Wines, with which they are almoſt over-run in *France*, ſufficiently accounts for their making ſuch vaſt Quantities of Brandy in *France*, more than other Countries, which lie in warmer Climates, and are much better adapted to the Production of Grapes.

Nor is this the only Fund of their Brandies; for all the Wine that turns eager, is alſo condemned to the Still; and, in ſhort, all that they can neither expert, nor conſume at home, which amounts to a large Quantity; ſince much of the Wine, laid in for their Family Proviſion, is ſo poor, as not to keep during the Time in ſpending.

Hence many of our *Engliſh* Spirits, with proper Management, are convertable into Brandies, that ſhall hardly be diſtinguiſhed from the foreign in many Reſpects, provided this Operation be neatly performed. And, in particular, how far a Cyder Spirit, and a Crab Spirit, may, even from the firſt Extraction, be made to reſemble the fine and thin Brandies of *France*, we would recommend to thoſe Diſtillers, whoſe Skill and Curioſity prompts them to Undertakings condemned by thoſe who only work mechanically, and ſcorn to deviate from the beaten Tract, tho' they have the faireſt Proſpect of acquiring Profit to themſelves, and a laſting Emolument to their Country.

CHAP. XIX.

Of the Diſtillation of Rum.

RUM differs from what we ſimply call Sugar Spirit, as it contains more of the natural Flavour, or eſſential Oil of the Sugar Cane; a great deal of raw Juice, and even Parts of the Cane itſelf being often fermented in the Liquor, or Solution, of which the Rum is prepared.

Hence we ſee from whence Rum derives its Flavour; namely, from the Cane itſelf. Some, indeed, are of Opinion, that the unctuous or oily Flavour of the Rum proceeds from the large Quantity of Fat uſed in boiling the Sugar. This Fat, indeed, if coarſe, will give a ſtinking Flavour to the Spirit in our Diſtillations of the Sugar Liquor, or Waſh, from our refining Sugar-houſes; but this is nothing like the Flavour of the Rum; which, as we have already obſerved, is the Effect of the natural Flavour of the Cane.

Great Quantities of Rum are made at *Jamaica*, *Barbadoes*, *Antigua*, and other Sugar Iſlands: The Method of making it is this:

When a ſufficient Stock of the Materials is got together, they add Water to them, and ferment them in the common Method, though the Fermentation is always carried on very ſlowly at firſt; becauſe at the Beginning of the Seaſon for making Rum in the Iſlands, they want Yeaſt, or ſome other Ferment to make it work; but after this, they, by Degrees, procure a ſufficient Quantity of the Ferment, which riſes up as a Head to the Liquor in the Operation; and thus they are able afterwards to ferment, and make their Rum with a great deal of Expedition, and in very large Quantities.

When the Waſh is fully fermented, or to a due Degree of Acidity, the Diſtillation is carried on in the common Way, and the Spirit is made up Proof; though ſometimes it is reduced to a much greater Degree of Strength, nearly approaching to that of Alcohol, or Spirit of Wine; and it is then called double diſtilled Rum.

It would be eaſy to rectify the Spirit, and bring it to a much greater Degree of Purity than we uſually find it to be of; for it brings over in the Diſtillation a large Quantity of the Oil; and this is often ſo diſagreeable, that the Rum muſt be ſuffered to lie by a long time to mellow before it can be uſed; whereas, if well rectified, its Flavour would be much leſs, and conſequently much more agreeable to the Palate.

The beſt State to keep Rum, both for Exportation, and other Uſes, is doubtleſs that of Alcohol, or rectified Spirits. In this manner, it would be contained in half the Bulk it uſually is, and might be let down to the common proof Strength with Water when neceſſary: For the common Uſe of making Punch, it would likewiſe ſerve much better in the State of Alcohol; as the Taſte would be cleaner, and the Strength might always be regulated to a much greater Degree of Exactneſs than in the ordinary Way.

If the Buſineſs of rectifying Rum was more nicely managed, it ſeems a very practicable Scheme to throw out ſo much of the Oil, as to reduce it to the fine light State of a clear Spirit, but lightly impregnated with the Oil; in this State it would nearly reſemble Arrac, as is eaſily proved by mixing a very ſmall Quantity of it with a taſteleſs Spirit;

for it then bears a very near Reſemblance to Arrac in Flavour.

CHAP. XX.

Of Sugar-Spirit.

WE mean by a Sugar-Spirit, that extracted from the Waſhings, Scummings, Droſs, and Waſte of a Sugar-baker's Refining-houſe.

Theſe recrementitious, or droſſy Parts of the Sugar are to be diluted with Water, fermented in the ſame manner as Moloſſes or Waſh, and then diſtilled in the common Method. And if the Operation be carefully performed, and the Spirit well rectified, it may be mixed with foreign Brandies, and even Arrac in a large Proportion, to great Advantage; for this Spirit will be found ſuperior to that extracted from Treacle, and conſequently more proper for theſe Uſes.

CHAP. XXI.

Of Raiſin-Spirits.

BY Raiſin-Spirits, we underſtand, that extracted from Raiſins, after a proper Fermentation.

In order to extract this Spirit, the Raiſins muſt be infuſed in a proper Quantity of Water, and fermented in the manner deſcribed in the Chapter on Fermentation. When the Fermentation is completed, the whole is to be thrown into the Still, and the Spirit extracted by a ſtrong Fire.

The Reaſon why we here direct a ſtrong Fire, is, becauſe by that Means a greater Quantity of the eſſential Oil will come over the Helm with the Spirit, which will render it much fitter for the Diſtiller's Purpoſe; for this Spirit is generally uſed to mix with common Malt Goods; and it is ſurprizing how far it will go in this Reſpect, ten Gallons of it being often ſufficient to give a determining Flavour, and agreeable Vinoſity to a whole Piece of Malt Spirits.

It is therefore well worth the Diſtiller's while to endeavour at improving the common Method of extracting Spirits from Raiſins; and perhaps the following Hint may merit Attention.

When the Fermentation is completed, and the Still charged with fermented Liquor, as above directed, let the whole be drawn off with as briſk a Fire as poſſible; but inſtead of the Caſk or Can, generally uſed by our *Engliſh* Diſtillers for a Receiver, let a large Glaſs, called by Chemiſts, a Separating-Glaſs, be placed under the Noſe of the Worm, and a common Receiver applied to the Spout of the Separating-Glaſs; by this means the eſſential Oil will ſwim upon the Top of the Spirit, or rather low Wine, in the Separating-Glaſs, and may be eaſily preſerved at the End of the Operation.

The Uſe of this limpid eſſential Oil is well known to Diſtillers; for in this reſides the whole Flavour, and conſequently may be uſed to the greateſt Advantage in giving that diſtinguiſhing Taſte, and true Vinoſity, to the common Malt-Spirits.

After the Oil is ſeparated from the low Wine, the Liquor may be rectified in *Balneum Mariæ* into a pure and almoſt taſteleſs Spirit, and therefore well adapted to make the fineſt compound Cordials, or to imitate or mix with the fineſt *French* Brandies, Arracs, *&c.*

In the ſame Manner a Spirit may be obtained from Cyder. But as its particular Flavour is not ſo deſirable as that obtained from Raiſins, it ſhould be diſtilled in a more gentle Manner, and carefully rectified in the Manner we ſhall ſhew in the Chapter on

Rectification; by which Means a very pure and almoſt inſipid Spirit will be obtained, which may be uſed to very great Advantage in imitating the beſt Brandies of *France*, or in making the fineſt compound Waters or Cordials.

CHAP. XXII.

Of Arracs.

WHAT is properly meant by the Term Arracs, are Spirits extracted from the fermented Juice of certain Trees common in the *Eaſt-Indies*, particularly thoſe of the Cocoa, or Palm-tree. The whole Proceſs of making Arrac, is performed in the following Manner.

In order to procure the vegetable Juice for this Operation, the Perſon provides himſelf with a ſufficient Number of ſmall earthen Pots, with Bellies and Necks, reſembling our common glaſs Bottles; a Number of theſe he faſtens to his Girdle, or to a Belt acroſs his Shoulders, and climbs up the tall Trunk of the Cocoa tree: Having reached the Boughs of the Tree, he cuts off with a Knife certain ſmall Buds, or Buttons, applying immediately to the Wound one of his Bottles, and faſtens it with a String to the Bough. In this Manner he proceeds till he has fixed his whole Number of Bottles, which ſerve as Receivers to the Juice diſtilling from the Wounds. This Operation is generally performed in the Evening, a greater Quantity of Juice flowing from the Tree in the Night than in the Day. The Bottles are next Morning taken off, and the Liquor emptied with a proper Veſſel, where it ſpontaneouſly ferments. As ſoon as the Fermentation is completed, the Liquor is thrown into the Still, and drawn down to a low Wine; but ſo very poor and dilute, that they are obliged to rectify it in another Still, to that weak kind of Proof Spirit, we generally ſee it; for though it appears Bubble-Proof, it rarely contains more than a ſixth, and ſometimes only an eighth of Alcohol, all the reſt being no more than an acidulated Water, which might be ſupplied from any common Spring. Why Arrac appears Bubble-Proof, when in reality ſo far below what we mean by Proof, is not ſo great a Myſtery, as at firſt Sight it appears to be; for this kind of Proof is entirely owing to a certain Tenacity of the Parts of the Liquor, or to the particular Property of the Oil incorporated in the Spirit; as we ſhall abundantly ſhew in a ſubſequent Chapter.

From this Account of Arrac, it ſhould ſeem no very difficult Matter to imitate it here. And, perhaps, the whole Difficulty lies in procuring a pure and inſipid Spirit; for it is ridiculous to attempt it with our common Malt-Spirit. With regard to the Flavour of the Arrac, it may be effectually imitated by ſome eſſential Oils eaſily procurable.

Hence we ſee of what prodigious Advantage a pure and inſipid Spirit would be of to Diſtillers, and conſequently the great Encouragement there is to attempt the Diſcovery. Perhaps a Spirit of this kind may be extracted from Sugar properly refined. The Hint is worth proſecuting; and the Writer of this Eſſay, from repeated Experiments, is abundantly convinced that the Thing is practicable. Had he entirely ſucceeded, he would readily have communicated the Whole for the Benefit of his Country; but is now obliged to defer, to ſome future Opportunity, the Reſult of his Enquiries. In the mean Time, he would recommend the Proſecution of this Hint to thoſe Diſtillers, who endeavour to improve their Art, and advance it nearer to Perfection.

Since Arrac is a Spirit extracted from the Juice of the Cocoa-tree, it might perhaps be worth enquiring how nearly it might be imitated by fermenting and diſtilling the

Juices of the Birch and Sycamore-trees. We ſhould by this Means obtain an *Engliſh* Arrac; and, perhaps, a Spirit equal in Flavour to that imported from *Batavia*.

When the Caſk, in which the Arrac is imported happens to be decayed; or the Liquor touches any Nails, or other Iron, it diſſolves Part of it, and at the ſame time extracts the reſinous Parts of the Oak, by which means the whole Liquor in the Caſk acquires an inky Colour. In order to whiten and clarify Arrac, which has contracted this Colour, a large Quantity of new or ſkimed Milk muſt be put into the Caſk, and the whole beat together, as Vintners do to whiten their brown Wines; by this means the inky Colour will be abſorbed by the Milk, and fall with it to the Bottom, ſo that the greateſt Part of the Arrac may be drawn off fine; and the Remainder procured in the ſame Condition by being filtrated through a conical Flannel Bag.

CHAP. XXIII.

Of Rectification.

THERE are ſeveral Methods of performing this Operation; though ſome, and indeed thoſe in general practiſed by our Diſtillers, hardly deſerve the Name; becauſe, inſtead of rectifying, that is freeing the Spirit from its eſſential Oil and Phlegm, they alter the natural Flavour of the Spirit that comes over in the Operation.

The principal Buſineſs of Rectification is to ſeparate the Spirit from the eſſential Oil of the Ingredient, which is very apt to adhere ſtrongly to the Spirit. And in order to this, Care ſhould be taken in the firſt Diſtillation; that is, the Spirit, eſpecially that from Malt, ſhould be drawn by a gentle Fire, by which means great Part of the eſſential Oil will be kept from mixing with the Spirit; for Experience has abundantly proved, that it is much eaſier to keep aſunder, than to ſeparate them when once mixed.

But as it is almoſt impoſſible to draw low Wines without the Spirit being in ſome Meaſure impregnated with the eſſential Oil, it is abſolutely neceſſary to be acquainted with ſome Methods of ſeparating the Spirit from the Oil, and alſo of freeing it from its Phlegm. The beſt Methods of doing this to Perfection, are Re-diſtillation and Percolation.

In order to rectify low Wines, they ſhould be put into a tall Body or Alembic, and gently diſtilled in *Balneum Mariæ*; by this means a large Proportion, both of the Oil and Phlegm will remain in the Body. But if the Spirit ſhould be found, after this Operation, to contain ſome of the eſſential Oil, it muſt be let down with fair Water, and re-diſtilled in the ſame gentle Manner. And thus it may be brought to any Degree of Purity; eſpecially if in the working the Spirit be ſuffered to fall into a proper Quantity of clear Water, and the Spirit afterwards rectified to the Height propoſed. The ſame Method ſhould be uſed in freeing Proof-Spirit, or even Alcohol, from this Oil; namely, by letting it down with clean Water to the Strength of low Wines, and re-diſtilling it in *Balneum Mariæ*. But it muſt be remembered, that it is much more difficult to cleanſe Alcohol, or Proof-Spirit than low Wines, becauſe the Oil is more intimately mixed with the two former than with the latter. This Oil may however be ſeparated from Proof-Spirit, *&c.* by the Method already propoſed, eſpecially if it be previouſly filtrated through Paper, thick Flannel, Sand, Stone, *&c.*

But this Method, though it effectually anſwers the Intention, is generally rejected by our Diſtillers, becauſe of the Slowneſs of the Operation; and others ſubſtituted in its ſtead, though inſtead of freeing the Spirit from the Oil, they only aboliſh the natural

Flavour of the Spirit, and make a more intimate Mixture between the Particles of the Spirit, and thoſe of the eſſential Oil.

It is impoſſible to enumerate all the Methods practiſed by Diſtillers, as almoſt every one pretends to have a ſecret Noſtrum for this Purpoſe. The principal Methods in uſe for rectifying Malt-Spirits, are however reducible to three, namely, by fixed alcaline Salts, by acid Spirits mixed with alcaline Salts, and by ſaline Bodies, and flavouring Additions.

The Method of rectifying by alcaline Salts is thus performed. To every Piece of Proof-Spirit, add fourteen Pounds of dry Salt of Tartar, fixed Nitre, or calcined Tartar; lute on the Head, and diſtil, by a gentle Heat, but be very careful to leave out the Faints. By this Method a large Proportion of the fœtid Oil will be left in the Still; and what comes over with the Spirit will be greatly attenuated. But this Operation is generally performed in a very different manner; for, inſtead of diſtilling the the Spirit in a gentle and equable manner, the Still is worked in its full Force; by which means the Oil, which ſhould have remained in the Still, is driven over, and intimately mixed with the Spirit; and, conſequently, the whole Operation fruſtrated, and the Spirit rendered much harder to cleanſe than it was before.

But even when the Operation is performed according to the Rules of Art, it is far from being perfect; for it is well known, that Part of the fixed Salts become volatile in the Operation, paſs over the Helm, and intimately mixes with the eſſential Oil ſtill contained in the Spirits: by this means the Oil becomes more perfectly united with the Spirits, and conſequently much harder to be ſeparated by repeated Diſtillations. Nor is this all, for the Still being worked in its full Force, the bitter Oil of the Malt, formed into a kind of liquid Soap in the Still, by means of the alcaline Salt, is brought over the Helm with the Faints, and ſuffered to mix with the Spirit, whereby it is rendered almoſt as nauſeous and ill-taſted as before the Operation. Beſides, if this Operation were performed in its utmoſt Perfection, it would never anſwer the Intention; for the alcaline Salt deſtroys the Vinoſity of the Spirit; and conſequently deprives it of one of its moſt valuable Properties. Our Diſtillers are well acquainted with this Defect in the Operation, and endeavour to ſupply it by an Addition of Acids. This is what we call the ſecond Method by Alcalies and Acids.

The Operation of rectifying by the Method of fixed Alcalies and Acids is the ſame as that above deſcribed; the Spirit is drawn over from fixed Alcalies as before; but in order to mortify the Alcali in the Spirit, and reſtore its Vinoſity, a proper Quantity of ſome acid Spirit is added. Various kinds of Acids are uſed on this Occaſion; but principally thoſe of the mineral Kind, becauſe of their Cheapneſs; as Oil of Vitriol, Spirit of Nitre, Oil of Sulphur, and the like. We would, however, caution a young Diſtiller from being too buſy with theſe corroſive Acids, the ſulphurous Spirit of Vitriol, dulcified Spirit of Nitre, or Mr. *Boyle*'s acid Spirit of Wine well rectified, will much better anſwer his Purpoſe.

The third Method of Rectification is that by ſaline Bodies, and flavouring Ingredients. There is no Difference in the Operation between this and the two foregoing Methods; fixed alcaline Salts, common Salt decrepitated or dried, calcined Vitriol, Sandiver, Allum, *&c.* is put into the Still with the low Wines, and the Spirit drawn over as before. When the Quantity is drawn off, the flavouring Ingredients are added to give the Spirit the Flavour intended. But as the Spirit is not by this means rendered ſufficiently pure, the diſagreeable Flavour of the Spirit generally overpowers that of the Ingredients, whereby the whole Intention is either deſtroyed, or a compound Flavour produced, very different from that intended.

Some Diſtillers, inſtead of alcaline Salts, uſe quick Lime in rectifying their Malt Spirit; this Ingredient cleanſes and dephlegmates the Spirit conſiderably; but like that rectified from alcaline Salts, it requires an alcaline Diſpoſition, and alſo an nidorous Flavour. Acids, therefore, are as neceſſary to be mixed with thoſe Spirits rectified with quick Lime, as with thoſe rectified with an alcaline Salt. If Chalk, calcined and well purified animal Bones, *&c.* were uſed inſtead of quick Lime, the Spirit would have a much leſs alcaline or nidorous Flavour; and, conſequently, the flavouring Ingredients might be added to it with more Succeſs than can be expected from a Spirit rectified from alcaline Salts.

But, perhaps, if neutral Salts were uſed inſtead of the alcaline ones, the Spirit might be rendered pure, without contracting an alcaline Flavour; ſoluble Tartar might be uſed for this Purpoſe, though the Spirit acquires from hence a little ſaponaceous Flavour. Dr. *Cox* has mentioned another Method for this Purpoſe, namely, to deprive the volatile Salts of their Oil, by rendering them neutral with Spirit of Salt, and afterwards ſubliming them with Salt of Tartar: The Acid may be varied if the Spirit of Salt ſhould not be found ſo well adapted to the Purpoſe as could be wiſhed: But fine dry Sugar ſeems the beſt adapted to the Purpoſe of rectifying theſe Spirits; as it readily unites with the eſſential Oil, detains and fixes it, without imparting any urinous, alcaline, or other nauſeous Flavour to the Spirits rectified upon it.

Thus have I conſidered the principal Methods uſed by our Diſtillers in rectifying their Spirits; and ſhall conclude this Chapter with remarking, that there is no other Way of rectifying to Perfection beſides what we firſt laid down, namely, by gentle Diſtillation. But then it muſt be remembered, that the whole Proceſs muſt be of a Piece: We mean, that the firſt Diſtillation from the Waſh muſt be performed in a gentle manner; for otherwiſe the eſſential Oil will be ſo intimately blended with the Spirit, as not to be eaſily ſeparated by Re-diſtillation. Another good Property attending this Method is its Univerſality; all kinds of Spirits, from whatever Ingredients extracted, require Rectification; and this is adapted to all kinds.

CHAP.

CHAP. XXIV.

Of the Flavouring of Spirits.

WE have obſerved in the preceding Chapter, that the common Method of rectifying Spirits from alcaline Salts, deſtroys their Vinoſity, and in its ſtead introduces an urinous or lixivious Taſte. But as it is abſolutely neceſſary to reſtore, or at leaſt to ſubſtitute in its room ſome Degree of Vinoſity, ſeveral Methods have been propoſed, and a Multitude of Experiments performed, in order to diſcover this great *Deſideratum:* But none has ſucceeded equal to the Spirit of Nitre; and accordingly this Spirit, either ſtrong or dulcified, has been uſed by moſt Diſtillers to give an agreeable Vinoſity to their Spirits.

Several Difficulties however occur in the Method of uſing it; the principal of which is, its being apt to quit the Liquor in a ſhort Time, and conſequently depriving the Liquor of that Vinoſity it was intended to give. In order to remove this Difficulty, and prevent the Vinoſity from quitting the Goods, the dulcified Spirit of Nitre, which is much better than the ſtrong Spirit, ſhould be prepared by a previous Digeſtion continued for ſome Time with Alcohol; the longer the Digeſtion is continued the more intimately will they be blended, and the Compound rendered the milder and ſofter.

After a proper Digeſtion, the dulcified Spirit ſhould be mixed with the Brandy, by which Means the Vinoſity will be intimately blended with the Goods, and diſpoſed not to fly off for a very conſiderable Time.

No general Rule can be given for the Quantity of this mineral Acid requiſite to be employed, becauſe different Proportions of it are neceſſary in different Spirits. It ſhould, however, be carefully adverted to, that though a ſmall Quantity of it will undoubtedly give an agreeable Vinoſity reſembling that naturally found in the fine ſubtile Spirits drawn from Wines, yet an over large Doſe of it will not only cauſe a diſagreeable Flavour, but alſo render the whole Deſign abortive, by diſcovering the Impoſition. Thoſe, therefore, who endeavour to cover a foul Taſte in Goods by large Doſes of dulcified Spirit of Nitre, will find themſelves deceived.

But the beſt, and indeed the only Method of imitating *French* Brandies to Perfection, is by an eſſential Oil of Wine; this being the very thing that gives the *French* Brandies their Flavour. It muſt, however, be remembered, that in order to uſe even this Ingredient to Advantage, a pure, taſteleſs Spirit muſt be firſt procured; for it is ridiculous to expect that this eſſential Oil ſhould be able to give the agreeable Flavour of *French* Brandies, to our fulſome Malt Spirit, already loaded with its own nauſeous Oil, or ſtrongly impregnated with a lixivious Taſte from the alcaline Salts uſed in Rectification. How a pure inſipid Spirit may be obtained has been already conſidered in ſome of the preceding Chapters; it only therefore remains to ſhew the Method of procuring this eſſential Oil of Wine, which is this:

Take ſome Cakes of dry Wine Lees, ſuch as are uſed by our Hatters, diſſolve them in ſix or eight times their Weight of Water, diſtil the Liquor with a ſlow Fire, and ſeparate the Oil by the Separating Glaſs; reſerving for the niceſt Uſes that only which comes over firſt, the ſucceeding Oil being coarſer and more reſinous.

Having procured this fine Oil of Wine, it may be mixed into a Quinteſſence with pure Alcohol; by which Means it may be preſerved a long time fully poſſeſſed of all its Flavour and Virtues; but without ſuch Management, it will ſoon grow reſinous and rancid.

When a fine eſſential Oil of Wine is thus procured, and alſo a pure and inſipid Spirit, *French* Brandies may be imitated to Perfection with regard to the Flavour. It muſt, however, be remembered, and carefully adverted to, that the eſſential Oil be drawn from the ſame ſort of Lees, as the Brandy to be imitated was procured from; we mean, in order to imitate *Coniac* Brandy, it will be neceſſary to diſtil the eſſential Oil from *Coniac* Lees; and the ſame for any other kind of Brandy. For as different Brandies have different Flavours; and as theſe Flavours are owing entirely to the eſſential Oil of the Grape, it would be prepoſterous to endeavour to imitate the Flavour of *Coniac* Brandy, with an eſſential Oil procured from the Lees of *Bourdeaux* Wine.

When the Flavour of the Brandy is well imitated by a proper Doſe of the eſſential Oil, and the Whole reduced into one ſimple and homogeneous Fluid, other Difficulties are ſtill behind: The Flavour, though the eſſential Part, is not however the only one; the Colour, the Proof and the Softneſs muſt be alſo regarded, before a Spirit, that perfectly reſembles Brandy, can be procured. With regard to the Proof, it may be eaſily hit, by uſing a Spirit rectiſied tified above Proof; which, after being intimately mixed with the eſſential Oil of Wine, may be let down to a proper Standard by fair Water. And the Softneſs may in a great Meaſure be obtained by diſtilling and rectifying the Spirit with a gentle Fire; and what is wanting of this Criterion in the Liquor, when firſt made, will be ſupplied by Time; for it muſt be remembered, that it is Time alone that gives this Property to *French* Brandies; they being at firſt, like our Spirits, acrid, foul, and fiery. But with regard to the Colour a particular Method is neceſſary to imitate it to Perfection: And how this may be done ſhall be conſidered in the next Chapter.

CHAP. XXV.

Of the Methods of colouring Spirits.

THE Art of colouring Spirits owes its Riſe to Obſervations on foreign Brandies. A Piece of *French* Brandy that has acquired by Age a great Degree of Softneſs and Ripeneſs is obſerved, at the ſame time, to have acquired a yellowiſh brown Colour; and hence our Diſtillers have endeavoured to imitate this Colour in ſuch Spirits as are intended to paſs for *French* Brandy. And in order to this a great Variety of Experiments has been made on various Subſtances, in order to diſcover a direct and ſure Method of imitating this Colour to Perfection. But, in order to do this, it is neceſſary to know from whence the *French* Brandies themſelves acquire their Colour; for till we have made this Diſcovery, it will be in vain to attempt an Imitation; becauſe, if we ſhould be able to imitate exactly the Colour, which is indeed no difficult Taſk, the Spirit will not ſtand the Teſt of different Experiments, unleſs the Colour in both be produced from the ſame Ingredient.

This being undeniably the Caſe, let us try if we cannot diſcover this mighty Secret; the Ingredient from whence the *French* Brandy acquires its Colour.

We have already obſerved, that this Colour is only found in ſuch Brandies as have acquired a mellow Ripeneſs by Age; it is therefore not given it by the Diſtiller, but has gained it by lying long in the Caſk. Conſequently, the Ingredient from whence this Colour is extracted, is no other than the Wood of the Caſk, and the Brandy in reality is become a dilute Tincture of Oak.

The common Experiment uſed to prove the Genuineneſs of *French* Brandy proves, that this Opinion is well founded. The Ex-

Experiment is this: They pour into a Glaſs of Brandy a few Drops of a Solution of calcined Vitriol of Iron in a diluted Spirit of Sulphur, or any other mineral Acid, and the Whole turns of a blue Colour; in the ſame Manner, as we make Ink of a Tincture of Galls and Vitriol.

Since, therefore, the Colour of *French* Brandies is acquired from the Oak of the Caſk, it is no Difficulty to imitate it to Perfection. A ſmall Quantity of the Extract of Oak, or the Shavings of that Wood properly digeſted, will furniſh us with a Tincture capable of giving the Spirit any Degree of Colour required. But it muſt be remembered, that as the Tincture is extracted from the Caſk by Brandy, that is Alcohol and Water, it is neceſſary to uſe both in extracting the Tincture; for each of theſe Menſtruums diſſolves different Parts of the Wood. Let, therefore, a ſufficient Quantity of Oak Shavings be digeſted in ſtrong Spirit of Wine; and alſo at the ſame Time other Oak Shavings be digeſted in Water: And when the Liquors have acquired a ſtrong Tincture from the Oak, let both be poured off from the Shavings, into different Veſſels, and both placed over a gentle Fire till reduced to the Conſiſtence of Treacle. In this Condition, let the two

Extracts be intimately mixed together; which may be done effectually by adding a ſmall Quantity of Loaf Sugar, in fine Powder, and well rubbing the Whole together. By this Means a liquid eſſential Extract of Oak will be procured, and always ready to be uſed as Occaſion ſhall require.

There are other Methods in Uſe for colouring Brandies; but the beſt, beſides the Extract of Oak above-mentioned, are common Treacle and burnt Sugar.

The Treacle gives the Spirits a fine Colour, nearly reſembling that of *French* Brandy; but as its Colour is but dilute, a large Quantity muſt be uſed; this is not however attended with any bad Conſequences; for notwithſtanding the Spirit is really weakened by this Addition, yet the bubble Proof, the general Criterion of Spirits, is greatly mended by the Tenacity imparted to the Liquor by the Treacle. The Spirit alſo acquires from this Mixture a ſweetiſh or luſcious Taſte, and a Fulneſs in the Mouth; both which Properties render it very agreeable to the Palates of the common People, who are, in fact, the principle Conſumers of theſe Spirits.

A much ſmaller Quantity of burnt Sugar than of Treacle will be ſufficient for colouring the ſame Quantity of Spirits; the Taſte is alſo very different; for, inſtead of the Sweetneſs imparted by the Treacle, the Spirit acquires from the burnt Sugar an agreeable Bitterneſs, and by that Means recommends itſelf to nicer Palates, which are offended with a luſcious Spirit. The burnt Sugar is prepared by diſſolving a proper Quantity of Sugar in a little Water, and ſcorching it over the Fire till it acquires a black Colour.

Either of the above Ingredients, Treacle or burnt Sugar, will nearly imitate the genuine Colour of old *French* Brandy; but neither of them will ſucceed, when put to the Teſt of the vitriolic Solution.

Thus have I traced the Subject of Diſtillation from its Origin; ſhewn the Methods commonly made uſe of by Diſtillers, and pointed out various Improvements, that might be introduced into this Art with great Advantage; and ſhall conclude this Part with recommending the ſeveral Hints to thoſe Diſtillers who are deſirous of improving their Art, and proceeding on a rational Foundation, it being from ſuch only that Improvements are to be expected; for where the Operations are conſtantly carried on in the ſame beaten Tract, it is in vain to expect Improvements, unleſs Chance ſhould be kind enough to throw that in their Way, which a rational Theory would have eaſily led them to diſcover.

A
Complete Syſtem
OF
DISTILLATION.

PART II.

Containing the Method of diſtilling Simple Waters.

CHAP. I.

THE Inſtruments chiefly uſed in the Diſtillation of Simple Waters, are of two Kinds, commonly called the *Hot Still*, or Alembic, and the *Cold Still*; the former is repreſented in *Fig.* 5. and the latter in *Fig.* 10.

The Waters drawn by the cold Still from odoriferous Plants are much more fragrant, and more fully impregnated with their Virtues than thoſe drawn by the hot Still, or Alembic; but the Operation is much more ſlow and tedious by the former than the latter, ſo that very few care to comply with it: And, therefore a Method has been invented, to avoid the Tedioufneſs of the one, and the Inconveniencies of the other. The Method is this:

A Pewter Body is ſuſpended in the Body of the Alembic, and the Head of the Still fitted to the Pewter Body: Into this Body the Ingredients to be diſtilled are put, the Alembic filled with Water, the Still Head luted to the Pewter Body, and the Noſe luted into the Worm of the Refrigeratory or Worm.

The ſame Intention will be anſwered, by putting the Ingredients into a Glaſs Alembic, and placing it in a Bath Heat, or *Balneum Mariæ*, as we have before directed, Chap. XI.

By either of theſe Means, the Ingredients have greater Heat given them than in the cold Still; and yet, by the Interpoſition of the Water, in which the Veſſel, containing them is placed, they are not ſo forcibly acted upon by the Fire, as in the common Way of the hot Still. So that all thoſe Things which require a middle Way between the other; that is, thoſe Simples which are of a Texture between very volatile, and very fixed, are treated very properly by this Method; but neither the very odoriferous Simples, nor thoſe whoſe Parts are very heavy and fixed, can be treated this Way but to Diſadvantage.

One of the greateſt Advantages of this Contrivance is, that Waters ſo drawn come over much cooler than from the hot Still; that is, they have not ſo much of the Fire in them, as the Diſtillers term it; ſo that a hot ſpicy Water, thus ordered, will taſte as cool on the Palate when juſt drawn, as it would, when drawn by the hot Still, after it had acquired a conſiderable Age.

CHAP. II.

Of Waters drawn by the cold Still.

THE cold Still is much beſt adapted to draw off the Virtues of Simples, which are valued for their fine Flavour when green, which is ſubject to be loſt in drying. For when we want to extract from Plants a Spirit ſo light and volatile, as not to ſubſiſt in open Air any longer than while the Plant continues in its Growth, it is certainly the beſt Method to remove the Plant from its native Soil, into ſome proper Inſtrument, where, as it dries, theſe volatile Parts can be collected and preſerved. And ſuch an Inſtrument is what we call the cold Still, where the drying of the Plant or Flower, is only forwarded by a moderate Warmth, and all that riſes is collected and preſerved.

As the Method of performing the Operation by the cold Still, is the very ſame, whatever Plant or Flower is uſed, the following Inſtance of procuring a Water from Roſemary, will be abundantly ſufficient to inſtruct the young Practitioner in the manner of conducting the Proceſs in all Caſes whatever.

Take Roſemary, freſh gathered, in its Perfection, with the Morning Dew upon it, and lay it lightly and unbruiſed upon the Plate, or Bottom of the Still. Cover the Plate with its conical Head, and apply a Glaſs Receiver to the Noſe of it. Make a ſmall Fire of Charcoal under the Plate, continuing it as long as any Liquor comes over into the Receiver. When nothing more comes over, take off the Still Head, and remove the Plant, putting freſh in its ſtead, and proceed as before; continue to repeat the Operation ſucceſſively, till a ſufficient Quantity of Water is procured. Let this diſtilled Water be kept at Reſt, in clean Bottles cloſe ſtopped, for ſome Days in a cold Place; by this Means it will become limpid, and powerfully impregnated with the Taſte and Smell of the Plant.

In this Water are contained the Liquor of Dew, conſiſting of its own proper Parts, which are not without Difficulty ſeparated from the Plant, and cleave to it even in the drying. This Dew, alſo, by ſticking to the Outſide, receives the liquid Parts of the Plant, which being elaborated the Day before, and exhaling in the Night, are hereby detained; ſo that they concrete together into one external Liquid, which is often viſcid, as appears in Manna, Honey, *&c.* This Water alſo contains the Fluid, which exhales from the Veſſels of the Roſemary, and which principally conſiſts of ſimple Water, as appears upon long ſtanding in an open Veſſel, when the Taſte and Odour vaniſhing, leave an inſipid Water behind. Another Part of this Water is that ſubtile, volatile Subſtance, which give the Plant its peculiar Taſte and Odour; for this the Senſes diſcover in it; but what remains after the Proceſs is finiſhed, ſcarce afford any thing thereof. The ſame Water ſeems alſo to contain Seeds, or other little Bodies, which in a certain Time uſually grows into a kind of thin, whitiſh Weed, ſuſpended in the middle of the Water; and daily increaſing or ſpreading itſelf, becomes a Mucilage, which did not appear at firſt.

I have kept theſe Waters undiſturbed in ſeparate well cloſed Veſſels, and obſerved that in a Year's Time, they began to appear thick, which Thickneſs gradually increaſed every Year, till at length the Liquor grew ropy and mucilaginous. Hence we ſee, that this Water contains the elementary Water, and preſiding Spirit of the Plant; a Spirit ſmall in Bulk, but rich in Virtues, and exhibiting the ſpecific Smell and Taſte of the Subject. This Water, therefore, in exhaling, proves a Vehicle to that Spirit, which contains in a ſmall, ſubtile, extremely volatile, and thence eaſily ſeparable Subſtance, the particular Virtue of the Plant, leaving the Remainder exhauſted in this Reſpect: and hence proceeds the medicinal Virtues of theſe Waters, which principally depend upon their native Spirit. For this Spirit, in moſt Plants, having a briſk Mobility, affects the Nerves, and raiſes the Spirits in caſe of their Depreſſion.

If the Veſſel be cloſe ſtopped, and ſet in a cool Place, the Waters drawn by the cold ſtill will retain their Virtues for a Year; but if negligently kept, or any Crack ſhould happen in the Glaſs, their extremely volatile Spirit ſecretly flies off, and leaves the Water vapid.

Hence we learn what it is that Plants loſe by being dried in the Summer-time; namely, the Water and Spirit we have been deſcribing. Hence we alſo know the Nature of that Fluid, which firſt riſes from Plants in Diſtillation, and what that Matter properly is in Plants, that gives their peculiar Odour; that is, their preſiding Spirit. Laſtly, we hence learn, in ſome meaſure at leaſt, what thoſe *Effluvia* are, which principally in the Summer-Seaſon, and in the open Air, exhale from Vegetables; for it is highly probable, that theſe conſtant Exhalations of Plants, eſpecially in the Day-time, have a near Agreement in their peculiar Nature, with the Liquor extracted by the cold Still, though differing in this, that the Exhalation made from the Parts is continually recruited by the Root; whilſt by our Operation, thoſe Parts alone are collected, which are driven off from the Plant, after being gathered, and no longer ſupplied with freſh Nouriſhment.

CHAP. II.

Of the Diſtilling Simple Waters by the Alembic.

THE Plants deſigned for this Operation are to be gathered when their Leaves are at full Growth, and a little before the Flowers appear, or, at leaſt, before the Seed comes on; becauſe the Virtue of the Simple expected in theſe Waters is often little, after the Seed or Fruit is formed, at which Time Plants begin to languiſh: The Morning is beſt to gather them in, becauſe the volatile Parts are then condenſed by the Coldneſs of the Night, and kept in by the Tenacity of the Dew, not yet exhaled by the Sun.

This is to be underſtood, when the Virtue of the diſtilled Water reſides principally in the Leaves of Plants; as it does in Mint, Marjoram, Pennyroyal, Rue, and many more; but the Caſe differs when the aromatic Virtue is only found in the Flowers, as in Roſes, Lillies of the Valley, *&c.* in which Caſe we chooſe their flowery Parts, whilſt they ſmell the ſweeteſt, and gather them before they are quite opened, or begin to ſhed, the morning Dew ſtill hanging on them.

In other Plants the Seeds are to be preferred, as in Aniſe, Caraway, Cumin, *&c.* where the Herb and the Flower are indolent, and the whole reſides in the Seed alone, where it manifeſts itſelf by its remarkable Fragrance, and aromatic Taſte. We find that Seeds are more fully poſſeſſed of this Virtue, when they arrive at perfect Maturity.

We muſt not omit that theſe deſirable Properties are found only in the Roots of certain Plants, as appears in Avens and in Orpine, whoſe Roots ſmell like a Roſe. Roots of this Kind ſhould be gathered, for the preſent Purpoſe, at that Time when they are richeſt in theſe Virtues; which is generally at that Seaſon of the Year, juſt before they begin to ſprout, when they are to be dug up in a Morning.

If the Virtues here required be contained in the Barks or Woods of Vegetables, then theſe Parts muſt be choſen for the Purpoſe.

The Subject being choſen, let it be bruiſed, or cut, if there be occaſion, and with it fill two thirds of a Still, leaving a third Part of it empty, without ſqueezing the Matter cloſe; then pour as much Rain or River Water into the Still as will fill it to the ſame Height; that is, two thirds together with the Plant: Fit on the Head, luting the Juncture, ſo that no Vapour may paſs through; and alſo lute the Noſe of the Still-head to the Worm. Apply a Receiver to the Bottom of the Worm, that no Vapour may fly off in the Diſtillation; but that all the Vapour being condenſed in the Worm, by cold Water in the Worm-tub, may be collected in the Receiver.

Let the Plant remain thus in the Still to digeſt for twenty-four Hours, with a ſmall Degree of Heat. Afterwards raiſe the Fire, ſo as to make the Water in the Still boil; which may be known by a certain hiſſing Noiſe, proceeding from the breaking Bubbles of the boiling Matter; as alſo by the Pipe of the Still-head, or the upper-end of the Worm, becoming too hot to be handled; or the ſmoaking of the Water in the Worm-tub heated by the Top of the Worm; and, laſtly, by the following of one Drop immediately after another, from the Noſe of the Worm, ſo as to form an almoſt continual Stream. By all theſe Signs we know that the requiſite Heat is given; if it be leſs than a gentle Ebullition, the Virtues of the Simple, here expected, will not be raiſed: On the contrary, when the Fire is too ſtrong, the Water haſtily riſes into the Still-head, and fouls both the Worm and the diſtilled Liquor; and the Plant being alſo raiſed, it blocks up the Worm; for which Reaſon it is no bad Caution to faſten a piece of fine Linen before the Pipe of the Still-head; that, in caſe of this Accident, the Plant may be kept from ſtopping up the Worm: But, notwithſtanding this Precaution, if the Fire be too fierce, the Plant will ſtop up the Pipe of the Still-head; and, conſequently, the riſing Vapour finding no Paſſage, will blow off the Still-head, and throw the boiling Liquor about the Still-houſe, ſo as to do a great deal of Miſchief, and even ſuffocate the Operator, without a proper Caution; and the more oily, tenacious, gummy, or reſinous the Subject is, the greater the Danger, in caſe of this Accident; becauſe the Liquor is the more frothy and exploſive.

Let the due Degree of Fire therefore be carefully obſerved, and equally kept up, as long as the Water, diſtilling into the Receiver, is white, thick, odorous, ſapid, frothy and turbid; for this Water muſt be carefully kept ſeparate from that which follows it. The Receiver, therefore, ſhould be often changed, that the Operator may be certain that nothing but this firſt Water comes over; for there afterwards ariſes a Water that is tranſparent, thin, and without the peculiar Taſte and Flavour of the

Plant, but generally ſomewhat tartariſh and limpid, though ſomewhat obſcured and fouled by white dreggy Matter: And if the Head of the Still be of Copper, and not tinned, the Acidity of this laſt Water corrodes the Copper, ſo as to become green, nauſeous, emetic and poiſonous to thoſe who uſe it, eſpecially to Children, and Perſons of weak Conſtitutions.

The firſt Water above-deſcribed, principally contains the Oil and preſiding Spirit of the Plant; for the Fire by boiling the Subject, diſſolves its Oil, and reduces it into ſmall Particles, which are carried upwards by the Aſſiſtance of the Water, along with thoſe Parts of the Plant that become volatile with their Motion. And, if the Veſſels are exactly cloſed, all theſe being united together, will be diſcharged without Loſs, and without much Alteration, into the Receiver; and, conſequently, furniſh us with a Water richly impregnated with the Smell, Taſte, and particular Virtues of the volatile Parts of the Plants it was extracted from.

The Water of the ſecond Running, wants the volatile Part above deſcribed, and has ſcarce any other Virtue than that of cooling.

And this is the beſt Method of preparing ſimple Waters, provided the two ſorts be not mixed together, for both of them would be ſpoiled by ſuch a Mixture.

Hence it plainly appears at what time, with the ſame Degree of Fire, quite contrary Virtues may ariſe from a Plant; for ſo long as a milk Water continues to come over from ſuch Plants as are aromatic, ſo long the Water remains warming and attenuating; but when it comes to be thin and pellucid, it is acid and cooling.

Hence we may alſo learn the true Foundation for conducting of Diſtillation; for if the Operation be ſtopped, as ſoon as ever the white Water ceaſes to come over, the Preparation will be valuable and perfect; but if, through a Deſire of increaſing that Quantity, more be drawn off, and the latter acid Part ſuffered to mix with the firſt Running, the whole will be ſpoiled, or at leaſt rendered greatly inferior to what it would otherwiſe have been.

Such is the general Method of procuring ſimple Waters, that ſhall contain the volatile Virtues of the Plants diſtilled; ſome Rules are however neceſſary to render it applicable to all Sorts of Plants; theſe Rules are the following:

1. Let the aromatic, balſamic, oily, and ſtrong-ſmelling Plants, which long retain their natural Fragrance, ſuch as Balm, Hyſſop, Juniper, Marjoram, Mint, Origanum, Pennyroyal, Roſemary, Lavender, Sage, *&c.* be gently dried a little in the Shade; then digeſt them, in the ſame manner as already mentioned, for twenty-four Hours, in a cloſe Veſſel, with a ſmall Degree of Heat, and afterwards diſtil in the manner above delivered, and thus they will afford excellent Waters.

2. When Waters are to be drawn from Barks, Roots, Seeds, or Woods that are very denſe, ponderous, tough and reſinous, let them be digeſted for three, four, or more Weeks, with a greater Degree of Heat, in a cloſe Veſſel, with a proper Quantity of Salt added, to open and prepare them the better for Diſtillation. The Quantity of Sea-ſalt is here added, partly to open the Subject the more, but chiefly to prevent Putrefaction, which otherwiſe would certainly happen in ſo long a Time, and with ſuch a Heat as is neceſſary in this Caſe, and ſo deſtroy the Smell, Taſte, and Virtues expected from the Proceſs.

3. Thoſe Plants which diffuſe their Odour to ſome Diſtance from them, and thus ſoon loſe it, ſhould immediately be diſtilled after being gathered in a proper Seaſon, without any previous Digeſtion; thus Borage, Bugloſs, Jeſſamin, white Lilies, Lilies of the Valley, Roſes, *&c.* are hurt by Heat, Digeſtion, or lying in the Air.

CHAP. III.

Of increaſing the Virtues of Simple Waters by means of Cohobation.

BY Cohobation is meant the returning the diſtilled Water procured in the manner deſcribed in the preceding Chapter, upon more of the freſh Plant. The Operation is performed in the following manner:

Take the Plant and Liquor remaining in the Still after the Operation deſcribed in the foregoing Chapter is performed, and preſs them ſtrongly in a Bag for that Purpoſe, that all the Decoction may be obtained; and with this mix all the Water before drawn over. Return this Mixture into the Still, and a freſh Quantity of the ſame Plant, and if neceſſary, as much Water as will make the former Proportion to the Plant. Cloſe all the Junctures exactly, and digeſt the whole in a gentle Degree of Heat for three Days and three Nights, that the Herb, being ſo long ſteeped in its own Liquor, may be opened, looſened, and diſpoſed the eaſier to part with its Virtues. This Digeſtion is of great Service; but if protracted too long, introduces a Change tending to Putrefaction. Let the Water now be diſtilled off, in the ſame manner as before; only proceeding more cautiouſly, and ſomewhat more ſlowly at firſt; becauſe the Liquor in the Still being now thicker, more impregnated with the Plant, and therefore more apt to ſmell upon feeling the Fire, it eaſily boils over; but after about half of the expected Water is come off, the Fire may be gradually raiſed.

By this Method, and carefully obſerving to change the Receiver, as ſoon as the firſt Water is all come over, a noble Liquor, highly impregnated with the Virtues of the Plant, will be obtained. And as this Operation may be repeated as often as deſired, the Virtues of Plants may be thus exalted to any Degree the Artiſt ſhall think proper; which ſhews the extraordinary Power of Diſtillation. This Method I would particularly recommend for making the ſimple Water of Balm, Elder Flowers, Roſes, and the like Simples, but ſparingly furniſhed with an eſſential Oil.

CHAP. IV.

Of the Method of procuring a ſimple Water from Vegetables, by previouſly fermenting the Vegetable before Diſtillation.

BY this elegant Method we obtain the Virtues of Plants very little altered from what they naturally are, though rendered much more penetrating and volatile. The Operation is performed in the following manner.

Take a ſufficient Quantity of any recent Plant, cut it, and bruiſe it if neceſſary; put it into a Caſk, leaving a Space empty at top of about four Inches deep; then take as much Water as would, when added, fill the Caſk to the ſame Height, including the Plant, and mix therein about an eighth Part of Honey, if it be cold Winter Weather; or a twelfth Part, if it be warm: In the Summer the like Quantity of coarſe, unrefined Sugar might be added inſtead of Honey, or half an Ounce of Yeaſt to each Pint of Water will have the ſame Effect; though moſt prefer Honey for this Purpoſe. When the proper Quantity of Honey is added to the Water, let it be warmed and poured into the Caſk, and ſet it in a warm Place to ferment for two or three Days; but the Herb muſt not be ſuffered to fall to the Bottom, nor the Fermentation above half finiſhed. The Whole muſt then be immediately committed to the Still, and the Fire raiſed by Degrees; for the Liquor, containing much fermenting Spirit, eaſily rarefies with the Fire, froths, ſwells, and therefore becomes very ſubject to boil over; we ought therefore to work ſlower, eſpecially at firſt.

By this Method there will come over at firſt, a limpid, unctuous, penetrating, odorous, ſapid Liquor, which is to be kept ſeparate: After this there follows a milky, opake, turbid Liquor, ſtill containing ſomething of the ſame Taſte and Odour; and at length comes one that is thin, acid, without either Smell, or ſcarce any Property of the Plant.

The firſt Water, or rather Spirit, may be kept ſeveral Years, in a cloſe Veſſel, without changing or growing ropy. It alſo excellently retains the Taſte and Odour of the Plant, though a little altered; but if leſs Honey were added, leſs Heat employed, or the Fermentation continued for a ſmaller Time, the diſtilled Liquor of the firſt running would be white, thick, opake, unctuous, frothy, and perfectly retain the Scent and Taſte of the Plant, or much leſs altered than in the former Caſe; though the Water will not be ſo ſharp and penetrating. After this is drawn off, a tartiſh, limpid, inodorous Liquor will come over.

And thus may ſimple Waters be made fit for long keeping without ſpoiling; the Proportion of inflammable Spirit generated in the Fermentation, ſerving excellently to preſerve them.

CHAP. V.

Of the Simple Waters commonly in Uſe.

SIMPLE Waters are not ſo much uſed at preſent as they were formerly; and perhaps one Reaſon for their being neglected, is the bad Methods uſed in diſtilling them; the Proceſs is carried on in the ſame manner with every Herb; though ſome ſhould be gently dried, and others diſtilled green; ſome ſhould be drawn with the cold, and others with the hot Still.

The general Rule that ſhould be obſerved with regard to the hot Still is, that all Herbs ſhould have twice their Weight of Water added to them in the Still; and not above a fourth, or a ſixth Part of it drawn off again; for ſimple Waters have their Faints, if drawn too low, as well as thoſe that are ſpirituous.

Some Plants, particularly Balm, require to have the Water drawn from them cohobated, or poured ſeveral times on a freſh Parcel of the Herb, in order to give it a proper Degree of Strength or Richneſs. Others, on the contrary, abound too much with an eſſential Oil that floats on the diſtilled Water; in this caſe all the Oil ſhould be carefully taken off. Laſtly, thoſe that contain a more fixed Oil, ſhould be imperfectly fermented, in the manner laid down in the preceding Chapter, before they are diſtilled; of this Kind are Carduus, Chamomile, *&c.*

The ſimple Waters now commonly made, are Orange-flower-water, Roſe-water, Cinnamon-water, Fennel-water, Pepper-mint-water, Spear-mint-water, Balm-water, Pennyroyal-water, *Jamaica* Pepper-water, Caſtor-water, Simple-water of Orange-peel, and of Dill ſeed.

CHAP.

CHAP. VI.

Of Orange flower-water.

THE Orange-tree grows plentifully in *Italy*, *Spain*, and *Portugal*, and bears Flowers and Fruit all the Year; but the Fruit is gathered chiefly in *October* and *November*.

The Flowers grow on the younger Shoots among the Leaves: They are white, and conſiſt of a ſingle cup-faſhioned Leaf, cut into five Parts, with ſeveral yellow Stamina in the middle, and of a fragrant odoriferous Smell.

Some Degree of Attention is requiſite to draw a ſimple and odoriferous Water for the Orange Flowers; the Fire muſt be carefully regulated; for too ſmall a Degree will not bring over the eſſential Oil of the Flowers, in which their odoriferous Flavour conſiſts: and, on the contrary, too ſtrong a Fire deſtroys the Fragrancy of the Water, and is very apt to ſcorch the Flowers, and give the Water an empyreumatic Smell. Care ſhould alſo be taken to faſten the Receiver to the End of the Worm with a Bladder, to prevent the volatile Parts from evaporating. The Quantity of Water, alſo, ſhould be carefully attended to, if you hope to ſucceed in the Operation. The following Receipts will anſwer the Intention.

Receipt for Orange-flower-water.

Take twelve Pounds of Orange-flowers, and twenty-four Quarts of Water, and draw over three Pints.

Or,

Take twelve Pounds of Orange Flowers, and ſixteen Quarts of Water; draw over fifteen Quarts, carefully obſerving what has been obſerved at the beginning of the Chapter with regard to the Regulation of the Fire.

The Manner of making Double Orange-flower-water, and the eſſential Oil, or Quinteſcence of Orange Flowers.

Having ſhewn how to make ſimple Orange-flower-water, we ſhall now ſhew how to make double Orange-flower-water, and the eſſential Oil, or Quinteſſence of Orange Flowers.

Double Orange-flower-water is made, by diſtilling the Orange Flowers in a cold Still; in the Manner laid down in the firſt Chapter. The Water extracted in this manner will be very odoriferous and grateful; being what is called Double Orange-flower-water. The ſame odoriferous Water will be obtained by diſtilling the Flowers in *Balneum Mariæ*, without any Water in the Still. If the cold Still be uſed put into it as many Flowers as the Head will well cover; and then make a gentle Fire under the Plate, and as ſoon as you perceive the Still is beginning to work, faſten the Receiver to the Beak of the Still with a Bladder. The ſame Caution muſt be obſerved if the Flowers are diſtilled in *Balneum Mariæ*.

To make this Water to Perfection, the Flowers ſhould be freſh gathered in the Morning with the Dew upon them, if poſſible; and carefully picked from the Leaves. You ſhould likewiſe make Choice of the largeſt Flowers, becauſe theſe yield moſt in Diſtillation. The Fire muſt be briſk when the Flowers are diſtilled in *Balneum Mariæ*; becauſe the Operation is longer in performing than by the common Alembic, and the Flowers are not here in Danger of being burnt at the Bottom of the Cucurbit. If you would have your Water of a fine Smell, let it be cohobated on freſh Flowers.

With this double Water, the eſſential Oil or Quinteſſence will come over, and float on the Surface of the Water. But a much larger Quantity of it will be obtained, by cohobating the Water on freſh Flowers in *Balneum Mariæ*. The eſſential Oil is at firſt of a green Colour, but after ſome Days it will turn reddiſh. The eſſential Oil is eaſily ſeparated from the Water, by the ſeparating Glaſs, in the following manner: Stop the Spout of the ſeparating Glaſs with a Cork, and then fill it with the Orange-flower-water; when it has ſtood a ſmall time the Oil will float on the Surface. Then pull out the Cork, and let the Water run out at the Spout into another Receiver placed for that Purpoſe. As the Water runs out at the Spout of the Separating-glaſs, let it be ſupplied at the Mouth, that the Separating-glaſs may be always full of Water, till the whole is in this manner poured into it. Then by gently inclining the Glaſs, pour out all the Water in it through the Spout, and the Oil will remain in the Separating-glaſs, and may be poured into another Bottle, and kept ſeparate from the Water. The double Orange-flower-water is odoriferous; but the eſſential Oil much more ſo.

Orange-flower-water is not at preſent ſo much uſed as formerly; but as it is a very odoriferous Water, I thought the Method of making it would be not unacceptable to the young Diſtiller.

The eſſential Oil, or Quinteſſence of Orange-flowers will make a very grateful Cordial, by mixing it with a clean proof Spirit: The Method of mixing it is this:

Take ſome fine Loaf Sugar, and drop on it the Quantity of Oil you intend to diſſolve in the Spirit, and rub them well together in a Glaſs Mortar, which is what the Chemiſts call making an Oleoſaccharum. Put this Oleoſaccharum into the Spirit; mix them well together, and dulcify it with Sugar to your Taſte. If the Spirit be too ſtrong, it may be lowered with Water; but you muſt obſerve, that if you add Water enough to bring the Spirit conſiderably below Proof, it will turn milky; and in order to render it fine, you muſt filtrate it thro' thick Flannel, or thin Paper. Twenty Drops of the eſſential Oil will be ſufficient for a Pint of Spirit, and the ſame Proportion to a larger Quantity.

CHAP. VII.

Of Roſe-water.

THE Damaſk Roſe is the Species intended to be uſed in this Operation; it is of a very fragrant Smell, and flowers in *June* and *July*. The Water may be made either by the hot Still, the cold Still, or the *Balneum Mariæ*. If the hot Still be uſed, the Leaves picked from the Stalks muſt be put into the Still with a ſufficient Quantity of Water to prevent an Empyreuma, and the Water drawn off by a gentle Fire. The Receiver muſt be luted with a Bladder to the Noſe of the Worm, to prevent the fineſt and moſt volatile Parts from evaporating, which they would otherwiſe do, to the great Prejudice of the Water.

If the cold Still be uſed, the Roſe Leaves either with the Dew on them, or ſprinkled with Water, muſt be laid on the Iron Plate, and covered with the conical Head. A gentle Fire muſt then be made under the Plate, and a Receiver luted with a Bladder to the Noſe of the Still. The Water will gradually diſtil into the Receiver, and be ſtrongly impregnated with the odoriferous Parts of the Roſes.

The ſame Method with regard to the *Balneum Mariæ* muſt be uſed in the Diſtillation of Roſes as in that of Orange-flowers, and therefore need not be repeated here. We ſhall therefore only obſerve, that Roſe-water drawn either by the cold Still, or the *Balneum Mariæ*, is much preferable to that drawn by the hot Still.

The Eſſence, or eſſential Oil of Roſes is looked upon as one of the moſt valuable Perfumes in the World; but at the ſame Time the moſt difficult to be procured in any Quantity. A ſmall Quantity of it is made in *Italy*, but it has always been thought impoſſible to procure it here; and, therefore, a Method of acquiring this valuable Commodity will not, I preſume, be diſagreeable to the Reader.

Take a Quantity of Damaſk Roſe Leaves, put them into a proper Veſſel, with a ſufficient Quantity of Water, adding ſome mineral Acid, as Spirit of Salt, Vitriol, *&c.* In this Menſtruum let the Roſes be digeſted for fifteen Days; after which put the Whole into an Alembic, and draw off the Water with a pretty briſk Fire. But, inſtead of the common Receiver, a Separating-Glaſs muſt be placed under the Noſe of the Worm, and a Receiver added to the Tube of the Separating-Glaſs. By this Means all the Oil or Eſſence will float on the Surface of the Water in the Separating-Glaſs, and may eaſily be ſeparated from it, when the Operation is finiſhed.

CHAP. VIII.

Of Cinnamon-water.

CInnamon is a thin fine Bark, rolled up in a ſort of little Pipes, from the thickneſs of a Gooſe-quill, to that of a Man's Thumb, and ſometimes more, and about two or three Feet long. Its Colour browniſh, with a Mixture of red. It is of an extremely aromatic Smell, and of an acrid and pungent, but very agreeable Taſte. It is the interior, or ſecond Bark of a Tree that grows plentifully in *Ceylon*. The People who gather it take off the two Barks together, and immediately ſeparating the outer one, which is rough, and has very little Fragrancy, they lay the other to dry in the Shade in an airy Place, where it rolls itſelf up into the Form wherein we ſee it.

The greateſt Cheats in the Sale of Cinnamon, are the ſelling ſuch as has already had its eſſential Oil diſtilled from it, and dried again, and the impoſing Caſſia Lignea in its Place. The firſt of theſe is diſcovered by the want of Pungency in the Cinnamon; the ſecond by this, that the Caſſia, when held a little Time in the Mouth, becomes mucilaginous, which the true Cinnamon never does. Cinnamon is a noble Drug, endued with many capital Virtues; it ſtrengthens the Viſcera, aſſiſts Concoction, diſpels Flatulencies, and is a pleaſant Cardiac.

Recipe for one Gallon of ſimple Cinnamon-Water.

Take a Pound of the beſt Cinnamon groſly powdered, digeſt for twenty-four Hours, in two Gallons of Water; put the Whole into an Alembic, and draw over one Gallon with a pretty briſk Fire.

The Oil of Cinnamon, in which the ſpecific Virtue of the Drug conſiſts, is very ponderous, and therefore will not come over the Helm unleſs the Fire be pretty briſk, eſpecially with a ſimple Water. It will therefore be in vain to attempt diſtilling ſimple Cinnamon-water by the *Balneum Mariæ*.

CHAP. IX.

Of Fennel-water.

FEnnel-water is extracted from a Seed larger and more beautiful than that produced by our common Fennel; it is called *Sweet Fennel ſeed*, being of a fragrant Smell, and aromatic ſweet Taſte, and is cultivated in *France* and *Italy*. It is to be choſen new, large and fair; but when damp or duſty to be rejected.

Recipe for one Gallon of Fennel-water.

Take one Pound of Sweet Fennel-ſeeds, and two Gallons of Water; put them into an Alembic, and draw off one Gallon with a gentle Fire.

CHAP. X.

Of Pepper-mint-water.

PEpper-mint is a very celebrated Stomachic, and on that account greatly uſed at preſent, and its Simple Water often called for.

Recipe for a Gallon of Pepper-mint-water.

Take of the Leaves of dried Pepper-mint, one Pound and a half; Water two Gallons and a half; put all into an Alembic, and draw off one Gallon, with a gentle Fire.

The Water obtained from Pepper-mint by Diſtillation in *Balneum Mariæ*, is more fragrant and more fully impregnated with the Virtues of the Plant than that drawn by the Alembic. The ſame may be ſaid with regard to that extracted by the cold Still; when the cold Still is uſed the Plant muſt be green, and if poſſible committed to the ſtill with the Morning Dew upon it.

CHAP. XI.

Of Spear-mint-water.

SPear-mint is alſo like Pepper-mint a great Stomachic, and therefore conſtantly uſed.

Recipe for one Gallon of Spear-mint-water.

Take of the Leaves of dried Spear-mint one Pound and a half; Water two Gallons and a half; draw off by a gentle Fire one Gallon.

This Water, like that drawn from Pepper-mint, will be more fragrant if diſtilled in *Balneum Mariæ*, or the cold Still; but if the latter be uſed, the ſame Caution muſt be obſerved of diſtilling the Plant green.

CHAP. XII.

Of Baum-water.

BAUM is a Plant well known in our Gardens. It flowers in *July*, and is of a fine cordial Flavour; but ſo weak, that it is ſoon diſſipated and loſt; nor is it eaſy to dry it ſo as to preſerve its natural Scent.

Baum-water, therefore ſhould be drawn when the Plant is green; and in order to procure the Water in full Perfection, it ſhould be cohobated, or returned, ſeveral times upon freſh Parcels of the Plant; by this means a Water may be procured from Baum extremely rich, and of conſiderable Uſe as a Cordial.

If the *Balneum Mariæ* be uſed, the Water is much better than that drawn by an Alembic. The Water drawn from this Plant by the cold Still will alſo be very fragrant, and highly impregnated with the Virtues of the Plant.

CHAP. XIII.

Of Penny-royal-water.

PEnny-royal, a Plant very common in *England*, is very warm, and its Parts very ſubtile and penetrating: It is one of the firſt Plants in Eſteem in the preſent Practice, as well as in former Ages, as an Attenuant and Uterine. It is good in Flatulences and Suppreſſions of Urine, and by many is greatly recommended in Dropſies, Jaundices, and other chronic Diſtempers. It communicates its Virtues to Water in Infuſion, and its ſimple Water has, perhaps, more Virtue than any other kept in the Shops. But as it is requiſite in order to obtain a Water fully impregnated with the Virtues of Baum, to cohobate it on freſh Parcels of the Plant; the Water drawn from green Penny-royal, on the contrary, generally contains ſo large a Portion of the eſſential Oil, that it is neceſſary to ſeparate what floats on the Surface of the Water, by the Separating-glaſs.

Recipe for one Gallon of Penny-royal-water.

Take of the dried Leaves of Penny-royal one Pound and a half, of Water three Gallons; draw off one Gallon with a gentle Fire.

The Water drawn from green Penny-royal by the cold Still, is very fragrant, and fully impregnated with the Virtues of the Plant.

CHAP. XIV.

Of Jamaica-*Pepper-water.*

Jamaica-Pepper, or Pimento, is the Fruit of a tall Tree growing in the mountainous Parts of *Jamaica*, where it is much cultivated, becauſe of the great Profit ariſing from the cured Fruit, ſent in large Quantities annually into *Europe*.

It is gathered, when green, and expoſed to the Sun for many Days on Cloths, and frequently ſhaked and turned, till thoroughly dry; great Care is taken during the Time of drying to defend the Fruit from the Morning and Evening Dews; when thoroughly dried it is ſent over to us.

It is a very noble Aromatic, and deſerves to be uſed more frequently than it is at preſent. The ſimple Water drawn from it is a better Carminative than any other ſimple Water at preſent in uſe.

Recipe for a Gallon of Jamaica-*Pepper-water.*

Take of *Jamaica*-Pepper half a Pound. Water two Gallons and a half; draw off one Gallon, with a pretty briſk Fire. The Oil of this Fruit is very ponderous, and therefore this Water is beſt made in an Alembic.

CHAP. XV.

Of Caſtor-water.

THIS Drug is brought to us in the Pods or Bags that naturally contained it, and theſe ſo much reſemble the Teſticles of an Animal, both in their dry State, and when on the Body of the Creatures, that it is no wonder People who did not examine their Situation on the Animal, really took them for ſuch; it is, however, a peculiar ſecreted Matter, contained in Bags deſtined to receive it.

Caſtor is an indurated Subſtance, formed of a Matter once fluid; the thinner Part of which has been evaporated by drying. It is a light and friable Matter, of a moderately lax Texture, and of a deep duſky brown Colour. It is of a ſomewhat acrid and bitteriſh Taſte, and of a ſtrong fœtid Smell, which, to many, is very diſagreeable.

The Animal that produces the Caſtor is by all Authors called Caſtor and Fiber, and by the Vulgar, the Beaver.

The Caſtor of ſeveral Parts of the World differs in Goodneſs, and in regard to the Care taken in the drying. The *Ruſſian* Caſtor has long been the moſt eſteemed, and the *New England* kind the leaſt.

Caſtor-water is of great Uſe in hyſteric Caſes, and all Diſeaſes of the Nerves; in Epilepſies, Palſies, and all Complaints of that kind.

Recipe for making one Gallon of Caſtor-water.

Take of *Ruſſia* Caſtor an Ounce, of Water three Gallons; draw off one Gallon with a pretty briſk Fire.

CHAP. XVI.

Of Orange-peel-water.

THE Orange is a Fruit too well known to need a Deſcription here. The Water is very grateful to the Taſte, and often uſed in Fevers, *&c.*

Recipe for one Gallon of Orange-peel-water.

Take of the outward yellow Rind of *Seville* Oranges, four Ounces; Water three Gallons and a half; draw off one Gallon by the Alembic, with a pretty briſk Fire.

CHAP. XVII.

Of the Water of Dill-ſeed.

DILL greatly reſembles Fennel both in Root, Stalk, or Leaf, but rarely grows ſo tall, or is ſo much branched; it bears the ſame kind of yellow Umbels of Flowers, after which come Seeds rounder, broader, and flatter than thoſe of Fennel. The whole Plant is of a ſtrong Scent, leſs pleaſant than Fennel. It grows in Gardens, and flowers and ſeeds in *July* and *Auguſt*. The Water drawn from the Seeds is heating and carminative, good in Cholics, and all Diſorders ariſing from Wind.

Recipe for making a Gallon of the Water of Dill-ſeed.

Take of Dill-ſeed one Pound, Water three Gallons; diſtil off by the Alembic one Gallon, with a pretty briſk Fire.

The Waters we have enumerated in this Part are thoſe now commonly in uſe; though there are many other Herbs, from whence Waters of great Uſe may be drawn; but as the Method of Diſtillation is the ſame in all, it would be of no Uſe to extend theſe Inſtructions to a greater length; we ſhall therefore only obſerve, that when unfavourable Seaſons have prevented the Herbs from attaining a proper Degree of Perfection, it will be neceſſary to increaſe their Proportion in extracting the ſeveral Waters ordered to be drawn by the Alembic.

A
Complete Syſtem
OF
DISTILLATION.

PART III.

Of making compound Waters and Cordials:

THE Perfection of this grand Branch of Diſtillery depends upon the Obſervation of the following general Rules, eaſy to be obſerved and practiſed.

1. The Artiſt muſt always be careful to uſe a well cleanſed Spirit, or one freed from its own eſſential Oil, as were before obſerved, Part I. Chap. xxiii. For as a compound Water is nothing more than a Spirit impregnated with the eſſential Oil of the Ingredients, it is neceſſary that the Spirit ſhould have depoſited its own.

2. Let the Time of previous Digeſtion be proportioned to the Tenacity of the Ingredients, or the Ponderoſity of their Oil. Thus Cloves and Cinnamon require a longer Digeſtion before they are diſtilled than Calamus Aromaticus or Orange-peel. Sometimes Cohobation (explained in Part II. Chap. iii.) is neceſſary; for Inſtance, in making the ſtrong Cinnamon-water; becauſe the eſſential Oil of Cinnamon is ſo extremely ponderous, that it is difficult to bring it over the Helm with the Spirit without Cohobation.

3. Let the Strength of the Fire be proportioned to the Ponderoſity of the Oil intended to be raiſed with the Spirit. Thus, for Inſtance, the ſtrong Cinnamon Water requires a much greater Degree of Fire than that from lax Vegetables, as Mint, Baum, *&c.*

4. Let only a due Proportion of the fineſt Parts of the eſſential Oil be united with the Spirit; the groſſer and leſs fragrant Parts of the Oil not giving the Spirit ſo agreeable a Flavour, and at the ſame Time renders it thick and unſightly. This may in a great Meaſure be effected by leaving out the Faints, and making up to Proof with fine ſoft Water in their ſtead.

Theſe four Rules carefully obſerved will render this extenſive Part of Diſtillation far more perfect than it is at preſent. Nor will their be any Occaſion for the uſe of burnt Allum, White of Eggs, Iſinglaſs, *&c.* to fine down Cordial Waters; for they will preſently be fine, ſweet and pleaſant taſted, without any farther Trouble.

CHAP. I.

Of ſtrong Cinnamon Water.

WE have already (Chap. viii. Part II.) deſcribed this Drug, and given ſome Directions for chuſing the beſt Sort, to which the Reader is refered.

Recipe for ſixteen Gallons of ſtrong Cinnamon Water.

Take eight Pounds of fine Cinnamon bruiſed, ſeventeen Gallons of clean rectified Spirit, and two Gallons of Water. Put them into your Still, and digeſt them twenty-four Hours with a gentle Heat; after which draw off ſixteen Gallons by a pretty ſtrong Heat.

I have ordered a much larger Quantity of Cinnamon than is common among Diſtillers, becauſe when made in the Manner above directed, it is juſtly looked upon as one of the nobleſt Cordial Waters of the Shops; but when made in the common Way of two Pounds to twenty Gallons of Spirit, as ſome have ordered, is only an Impoſition on the Buyer. Some alſo, to render the Goods cheaper, uſe equal Quanties of Cinnamon and Caſſia Lignea; but by this means the Cordial is rendered much worſe; and, therefore, if you deſire a fine Cinnamon-water the above Recipe will anſwer your Intention: But if a cheaper Sort be deſired you may leſſen the Quantity of Cinnamon, and add Caſſia Lignea in its ſtead. If you would dulcify your Cinnamon-water, take double refined Sugar, what Quantity you pleaſe, the general Proportion is, about two Pounds to a Gallon, and diſſolve it in the Spirit after you have made it up Proof with clean Water. One general Caution is here neceſſary to be added; namely, that near the End of the Operation you carefully watch the Spirit as it runs into the Receiver, in order to prevent the Faints mixing with the Goods. This you may diſcover by often catching ſome of it, as it runs from the Worm in a Glaſs, and obſerving whether it is fine and tranſparent; for as ſoon as ever the Faints begin to riſe, the Spirit will have an azure or bluiſh Caſt. As ſoon therefore as you perceive this Alteration, change the Receiver immediately; for if you ſuffer the Faints to mix with your other Goods, the Value of the whole will be greatly leſſened. With regard to the Faints, they are to be kept by themſelves, and poured into the Still when a freſh Parcel of the ſame Goods is to be made.

It is alſo neceſſary to obſerve here, once for all, that the Diſtillers call all Goods made up Proof, *double Goods*; and thoſe which are below Proof, *ſingle*. This Obſervation will be alone ſufficient to inſtruct the young Diſtiller, how he may at any Time turn his Proof or double Goods into ſingle.

CHAP. II.

Of Clove Water.

CLOVES, from whence this Water takes its Name, are the Fruit of a Tree growing in the *Molucca* Iſlands. The Figure of this Fruit is oblong, and not very thick, reſembling in ſome meaſure, a Nail. The Surface of it is rough, and the Colour a duſky brown with an admixture of reddiſh. The whole Fruit is of an extremely fragant Smell, and of an acrid, pungent, and very aromatic Taſte. Cloves are to be choſen the largeſt, faireſt, darkeſt coloured, the heavieſt and moſt unctuous on the Surface, when preſſed between the Fingers. Cloves are carminative, and good againſt all Diſtempers of the Head ariſing from cold Cauſes. They ſtrengthen the Sight, and are good againſt Faintings, Palpitations of the Heart, and Crudities in the Stomach.

Recipe for fifteen Gallons of Clove Water.

Take of Cloves bruiſed four Pounds, Pimento or All-ſpice half a Pound, clean Proof of Spirit ſixteen Gallons; let it digeſt twelve Hours in a gentle Heat, and then draw off fifteen Gallons with a pretty briſk Fire.

Or,

Take *Winter*'s Bark, four Pounds, Pimento ſix Ounces, Cloves one Pound and a Quarter; clean Proof Spirits ſixteen Gallons: Digeſt, and draw off as before.

The *Winter*'s Bark, added in the ſecond Recipe is the Bark of a large Tree, growing in ſeveral Parts of *America*, and has its name from its Diſcoverer Captain *Winter*. The outer Rind of it is of an uneven Surface, and of a looſe Texture, very brittle, and eaſily powdered. The inner Part, in which the principal Virtue reſides, is hard, and of a duſky reddiſh brown Colour. It is of an extremely fragant and aromatic Smell, and of a ſharp, pungent, and ſpicy Taſte, much hotter than Cinnamon in the Mouth, and leaving in it a more laſting Flavour. It is to be choſen in Pieces not too large, having the inner or brown Part firm and ſound, and of a very pungent Taſte. It is apt to be worm-eaten; but in that Caſe it ſhould be wholly rejected, as having loſt the moſt eſſential Part of its Virtue.

If you deſire to have your Clove Water red, it may be coloured either by a ſtrong Tincture of Cochineal, Alkanet-root, or

Corn-poppy-flowers. The firſt gives the moſt elegant Colour, but it is not often uſed on Account of its Dearneſs.

You may dulcify it to your Palate, by diſſolving in it double refined Sugar. Some for Cheapneſs uſe a coarſer Kind of Sugar; but this renders the Goods foul and unſightly. Some alſo, to ſave Expences, make what they call Clove Water, with Cloves and Caraway-ſeeds; the Proportion they generally uſe is half an Ounce of Cloves, and two Drams of Carraway-ſeeds to a Gallon of Spirit.

CHAP. III.

Of Lemon Water.

THE Peel of the Lemon, the Part uſed in making this Water, is a very grateful bitter Aromatic, and on that Account very ſerviceable in repairing and ſtrengthening the Stomach.

Recipe for ten Gallons of Lemon Water.

Take of dried Lemon-peel four Pounds, clean Proof Spirit ten Gallons and a Half, and one Gallon of Water. Draw off ten Gallons by a gentle Fire. Some dulcify

Lemon-water, but by that means its Virtues as a Stomachic, are greatly impaired.

CHAP. IV.

Of Hungary Water.

ROSEMARY, the principal Ingredient in Hungary Water, has always been a favourite Shrub in Medicine; it is full of volatile Parts, as appears by its Taſte and Smell. It is a very valuable Cephalic, and is good in all Diſorders of the Nerves; in Hyſteric and Hypocodriac Caſes, in Palſies, Apoplexies, and Vertigoes. Some ſuppoſe that the Flowers poſſeſs the Virtues of the whole Plant in a more exalted Degree than any other Part; but the flowery Tops, Leaves, and Huſks, together with the Flowers themſelves, are much fitter for all Purpoſes, than the Flowers alone.

Recipe for ten Gallons of Hungary Water.

Take of the flowery Tops, with the Leaves and Flowers of Roſemary fourteen Pounds, rectified Spirit eleven Gallons and a Half, Water one Gallon, diſtil off ten Gallons with a moderate Fire. If you perform this Operation in Balneum Mariæ, your Hungary Water will be much finer, than if drawn by the common Alembic.

This is called Hungary Water, from its being firſt made for a Princeſs of that Kingdom. Some add Lavender-flowers, and others Florentine-orice-root; but what is moſt eſteemed is made with Roſemary only.

CHAP. V.

Of Lavender Water.

THERE are two Sorts of Lavender Water, the Simple and Compound; the firſt is much uſed externally on Account of its Fragrancy, and cephalic Virtues; the latter internally in a great Number of Diſorders.

Recipe for ten Gallons of ſimple Lavender Water.

Take fourteen Pounds of Lavender-flowers, ten Gallons and a Half of rectified Spirit of Wine, and one Gallon of Water; draw off ten Gallons with a gentle Fire; or, which is much better, in Balneum Mariæ.

Both the Hungary and Lavender Water, may be made at any Time of the Year without Diſtillation, by mixing the Oil of the Plant with highly rectified Spirit of

Wine. In order to this, when the Plant is in Perfection, you ſhould diſtill a large Quantity of it in Water with a very briſk Fire; placing under the Noſe of the Worm the Separating-glaſs' (deſcribed Page 31. Part I. of this Treatiſe) by which means you will obtain the eſſential Oil of the Plant, in which both its Fragrancy and Virtues reſide. Having procured the eſſential Oil of the Plant, the Water may readily be made in the following Manner. Put the rectified Spirit into the Receiver (deſcribed Page 32. Fig. xii.) and let an Aſſiſtant ſhake it with a quick Motion; whilſt the Spirit is thus agitated, drop in leiſurely the eſſential Oil, and it will mix without any Foulneſs or Milkineſs. The Oils of Lavender and Roſemary are imported cheaper from abroad, than they can be made here; but theſe Oils will not mix with the Spirit, without rendering it foul and milky; and therefore if you propoſe making Hungary or Lavender Water in this Manner; it will be neceſſary to extract the Oil yourſelf.

Recipe for making three Gallons of compound Lavender Water.

Take of Lavender Water above deſcribed two Gallons, of Hungary Water one Gallon, Cinnamon and Nutmegs of each three Ounces, and of red Saunders one Ounce;

digeſt the whole three Days in a gentle Heat, and then filter it for uſe. Some add Saffron, Muſk, and Ambergreaſe of each half a Scruple; but theſe are now generally omitted.

This compound Lavender Water has been long celebrated in all nervous Caſes. In all Kinds of Palſies, and Loſs of Memory it is of the greateſt Service; and has been ſo much remarked for its Efficacy in theſe Complaints, as almoſt univerſally to obtain the Name of *Palſy Drops*.

CHAP. VI.

Of Citron Water.

THE Citron is an agreeable Fruit reſembling a Lemon in Colour, Smell and Taſte. The Inſide is white, fleſhy and thick, containing but a ſmall Quantity of Pulp, in Proportion to the Bigneſs of the Fruit.

Recipe for making ten Gallons of Citron Water.

Take of dry yellow Rinds of Citron four Pounds, clean Proof Spirit ten Gallons and a Half, Water one Gallon, digeſt the whole twenty-four Hours with a gently Heat;

draw off ten Gallons, with a gentle Fire; or, which is much better, in Balneum Mariæ, and dulcify it with fine Sugar to your Palate.

Or,

Take of dry yellow Rinds of Citrons three Pounds, of Orange-peel two Pounds, Nutmegs bruiſed three Quarters of a Pound; digeſt, draw off, and dulcify as before.

This is one of the moſt pleaſant Cordials we have; and the Addition of the Nutmegs, in the ſecond Receipt, increaſes its Virtue as a Cephalic and Stomachic.

CHAP. VII.

Of Aniſeed Water.

ANISEED is a ſmall Seed of an oblong Shape, each way ending in an obtuſe Point; its Surface is very deeply ſtriated, and it is of a ſoft and lax Subſtance, very light and eaſily broken. Its colour is a Kind of pale olive, or greeniſh grey; it has a very ſtrong and aromatic Smell, and a ſweetiſh but acrid Taſte, but in the whole not diſagreeable. Aniſeed ſhould be choſen large, fair, new, and clean, of a good Smell, and acrid Taſte. The Plant that produces it is cultivated in many Parts of *France*; but the fineſt Seed comes from the Iſland of *Malta*, where it is raiſed for Sale, and whence a great Part of *Europe* is ſupplied.

Recipe for ten Gallons of Aniſeed Water.

Take of Aniſeed bruiſed two Pounds, Proof Spirits twelve Gallons and a Half, Water one Gallon; draw off ten Gallons with a moderate Fire.

Or,

Take of the Seeds of Aniſe and Angelica, each two Pounds, Proof Spirits twelve Gallons and a half; draw off as before.

Aniſeed Water ſhould never be reduced below Proof, becauſe of the large Quantity of Oil with which the Spirit is impregnated, and which will render the Goods milky and foul, when brought down below Proof; but if there be a neceſſity for doing this, the Goods muſt be filtrated either thro' Paper or the filtrating Bag, which will reſtore their Tranſparency.

Aniſeed Water is a good Carminative, and therefore in great Requeſt among the common People againſt the Cholic.

CHAP.

CHAP. VIII.

Of Caraway Water.

CARAWAY-SEED is of an oblong and ſlender Figure, pointed at both Ends, and thickeſt in the Middle. It is ſtriated on the Surface, conſiderably heavy, of a deep brown Colour, and ſomewhat bright or gloſſy. It is of a very penetrating Smell, not diſagreeable, and of a hot, acrid and bitteriſh Taſte. Caraway-ſeed is to be choſen large, new and of a good Colour, not duſty, and of an agreeable Smell. The Plant which produces the Caraway-ſeed grows wild in the Meadows of *France* and *Italy*, and in many other Places; but is ſown in Fields for the ſake of the Seeds in *Germany*, and many other Parts of *Europe*.

Recipe for making ten Gallons of Caraway Water.

Take of Caraway-ſeeds bruiſed three Pounds, Proof Spirit twelve Gallons, Water two Gallons; draw off ten Gallons, or till the Faints begin to riſe; make the Goods up with clean Water, and dulcify with common Sugar to your Taſte.

Or,

Take of Caraway-ſeed bruiſed two Pounds and a Half, Orange or Lemon-peel dried one Pound, Proof Spirit twelve Gallons, Water two Gallons; draw off and dulcify as before.

Caraway Water, like that of Aniſeed, is a good Carminative; but not ſo much uſed, tho' much pleaſanter.

CHAP. IX.

Of Cardamom Seed Water.

THE Seed from whence this Water takes its Name, is called by Botaniſts *Cardamum Minus*, or the leſſer Cardamom; to diſtinguiſh it from the *Cardamomum Majus*, or Grains of Paradiſe.

The leſſer Cardamom is a ſmall ſhort Fruit, or membranaceous Capſule, of a trigonal Form, about a third of an Inch long, and ſwelling out thick about the Middle; beginning ſmall and narrow from the Stalk, and terminating in a ſmall, but obtuſe Point at the End. It is ſtriated all over very deeply with longitudinal Furrows, and conſiſts of a thin but very tough Membrane, of a fibrous Texture, and pale-brown Colour, with a faint Caſt of red. When the Fruit is thoroughly ripe, this Membrane opens at the three Edges all the way, and ſhews that it is internally divided by three thin Membranes into three Cells, in each of which is an Arrangement of Seeds, ſeparately lodged in two Series. The Seeds are of an irregular angular Figure, rough, and of a duſky brown Colour on the Surface, with a Mixture of yellowiſh and reddiſh, and of white Colour within. They have not much Smell, unleſs firſt bruiſed, when they are much like Camphire under the Noſe. They are of an acrid, aromatic and firey hot Taſte. They ſhould be choſen ſound, cloſe ſhut on all Sides, and full of Seeds, of a good Smell, and of an acrid aromatic Taſte.

Recipe for ten Gallons of Cardamom Seed Water.

Take of the leſſer Cardamom Seeds huſked two Pounds and a Half, of clean Proof Spirit ten Gallons and a Half, and of Water one Gallon; draw off ten Gallons by a gentle Heat. You may either dulcify it or not with fine Sugar at pleaſure.

This Water is Carminative, aſſiſts Digeſtion, and good to ſtrengthen the Head and Stomach.

CHAP. X.

Of Aqua Mirabilis; or, the Wonderful-Water.

MOST of the Ingredients in this Compoſition have already been deſcribed, and an Account of the Nutmegs will be given in Chap. xxv. But the Cubebs and Ginger remain to be mentioned.

Cubebs are ſmall dried Fruit reſembling a Pepper-corn, but often ſomewhat longer; of a dark brown Colour, compoſed of a wrinkled external Bark; of an aromatic, tho' not very ſtrong Smell, and of an acrid and pungent Taſte, tho' leſs ſo than Pepper; but its Acrimony continues long on the Tongue, and draws forth a large Quantity of Saliva. We have two Kinds of Cubebs, which differ only in their Periods of gathering, both are produced from the ſame Plant. The unripe Cubebs are ſmall, very wrinkled on the Surface, and their Nucleus, when broken, is flacid: But the ripe ones not ſo. Cubebs are brought from the Iſland *Java*, where they grow in great Abundance. They ſhould be choſen large, freſh, and ſound, and the heavieſt poſſible. They are warm and carminative, and eſteemed

ſteemed good in Vertigoes, Palſies, and Diſorders of the Stomach.

Ginger is a Root too well known to need a long Deſcription; it is ſufficient to obſerve that it is of a pale yellowiſh Colour when broken, of a fibrous Structure, and eaſily beat into a Sort of woolly or long thready Matter. It is of very hot, acrid, and very pungent Taſte; but Aromatic withal, and of a very agreeable Smell. We have it both from the *Eaſt* and *Weſt Indies*; but the oriental is much ſuperior to the occidental in its Flavour, of a firmer Subſtance, and does not beat out ſo much into Threads. Ginger is an excellent Carminative and Stomachic; it aſſiſts Digeſtion, diſpells Flatus's, and takes off Cholic Pains almoſt inſtantaneouſly.

There are ſeveral Receipts for making this celebrated Cordial; but the following are allowed to be the beſt.

Take of Cinnamon one Pound and a Quarter, Rind of Lemon-peels ten Ounces, Cubebs one Ounce and a Quarter, Leaves of Baum one Pound; bruiſe all theſe Ingredients, and pour on them eleven Gallons of clean Proof Spirit, and one Gallon of Water; digeſt the whole twenty-four Hours, and diſtil off ten Gallons with a pretty briſk Fire; and dulcify it with fine Sugar.

Or,

Take of the leſſer Cardamoms, Cloves, Cubebs, Galangal, Mace, Nutmeg, and Ginger, of each one Pound and three Quarters, of the yellow part of Citron-peel and Cinnamon of each three Pounds and a Half, of the Leaves of Balm one Pound; bruiſe theſe Ingredients, and pour on them eleven Gallons of Spirit and one Gallon of Water; digeſt, and draw off, *&c.* as before.

This Cordial has been long celebrated as a noble Stomachic, and therefore greatly called for.

Some inſtead of all the Ingredients enumerated in the above Receipts uſe only Pimento; and this is the ſort of Aqua Mirabilis which ſome ſell ſo very cheap.

CHAP. XI.

Of Mint Water.

THE Mint intended in this Recipe is the common Spear-mint, an Account of which has already been given. Page 137.

Recipe for ten Gallons of Mint Water.

Take of dry Spear-mint Leaves fourteen Pounds, Proof Spirit ten Gallons and a Half, Water two Gallons; draw off ten Gallons by a gentle Heat. You may dulcify it with Sugar if required.

Mint Water is greatly recommended by the learned *Boerhaave* and *Hoffman*, againſt Vomitting, Nauſeas, and the Cholic.

CHAP. XII.

Of Pepper Mint Water.

THE Pepper-mint has been already deſcribed Page 136, to which the Reader is referred.

Recipe for ten Gallons of Pepper Mint Water.

Take of dry Pepper Mint Leaves fourteen Pounds, Proof Spirit ten Gallons and a Half, Water one Gallon; draw off ten Gallons by a gentle Fire. You may either dulcify it or not.

Pepper Mint Water is a noble Stomachic, good againſt Vomiting, Nauſeas, Cholic, and other griping Pains in the Bowels, in all which Intentions it greatly exceeds the common Spear Mint Water.

CHAP. XIII.

Of Angelica Water.

THERE are two Sorts of Angelica Water, the Single and the Compound. I ſhall give Receipts for making both Kinds; and with regard to the Nature of Angelica, it is ſufficient to obſerve, that it is an excellent Carminative.

Recipe for ten Gallons of ſingle Angelica Water.

Take of the Roots and Seed of Angelica cut and bruiſed, of each one Pound and a Half, Proof Spirit eleven Gallons, Water two Gallons; draw off ten Gallons, or till the Faints begin to riſe, with a gentle Fire; and dulcify it, if required, with lump Sugar.

This Angelica Water is a good Carminative, and therefore good againſt all Kinds of flatulent Cholics, and Gripings of the Bowels.

Recipe

Recipe for ten Gallons of Compound Angelica Water.

Take of the Roots and Seeds of Angelica, and of ſweet Fennel-ſeeds of each one Pound and a Half, of the dried Leaves of Baum and Sage of each one Pound; ſlice the Roots and bruiſe the Seeds and Herbs, and add to them of Cinnamon one Ounce, of Cloves, Cubebs, Galangals, and Mace, of each three Quarters of an Ounce, of Nutmegs, the leſſer Cardamom-ſeed, Pimento, and Saffron of each half an Ounce; infuſe all theſe in twelve Gallons of clean Proof Spirit, and draw off ten Gallons, with a pretty briſk Fire. It may be dulcified or not at pleaſure.

This is an excellent Compoſition, and a powerful Carminative; and good in all flatulent Cholics, and other griping Pains in the Bowels. It is alſo good in Nauſeas, and other Diſorders of the Stomach.

It may not be amiſs to obſerve here, that in diſtilling this and ſeveral other Compoſitions, abounding with oily Seeds, the Operator ſhould be careful not to let the Faints mix with the other Goods, as they would by that means be rendered nauſeous and unſightly; he ſhould therefore be careful towards the letter End of the Operation, to catch ſome of the Spirit as it runs from the Worm in a Glaſs; and as ſoon as ever he perceives it the leaſt cloudy, to remove the Receiver, and draw the Faints by themſelves.

CHAP. XIV.

Of Orange Water.

THIS Water is made in the ſame Manner from the Peels of Oranges, as Citron Water; Chap. vi. is from the Peels of Citrons.

Recipe for ten Gallons of Orange Water.

Take of the yellow Part of freſh Orange-peels five Pounds, clean Proof Spirit ten Gallons and a Half, Water two Gallons; draw off ten Gallons with a gentle Fire.

This is a good Stomachic, and may alſo be uſed for making bitter Tinctures, as that called *Stoughton*'s Drops.

CHAP. XV.

Of Plague Water.

THERE are ſeveral Receipts for making Plague Water; but the following are much the beſt.

Recipe for ten Gallons of Plague Water.

Take of the Roots of Maſterwort and Butter-burr, of each one Pound and a Quarter, *Virginia* Snake-root and Zeadory, of each ten Ounces, Angelica-ſeeds and Bay-ſeeds of each fourteen Ounces, and of the Leaves of Scordium one Pound and a Half. Cut or bruiſe theſe Ingredients and put them into the Still, with twelve Gallons of clean Proof Spirit, and two Gallons of Water; digeſt the whole for twenty-four Hours, and draw off ten Gallons.

Or,

Take of the Leaves of Celandine, Roſemary, Rue, Sage, Roman Wormwood, Dragons Agrimony, Baum, Scordium, the leſſer Centory, Carduus Benedictus, Betony, and Mint, of each twenty Handfuls; of dried Angelica-root, Zeadory and Gentian, of each ten Ounces, and of *Virginia* Snakroot five Ounces; digeſt theſe twenty-four Hours, in twelve Gallons of clean Proof

Spirit, and two Gallons of Water; and then draw off ten Gallons as before.

Or,

Take of Rue, Roſemary, Baum, Carduus Benedictus, Scordium, Marigold-flowers, Dragons, Goat's-rue, and Mint, of each ten Handfuls; Roots of Maſterwort, Angelica, Butter-burr, and Peony, of each one Pound and a Quarter; and of Viper-graſs ten Ounces; digeſt in twelve Gallons of Spirit, *&c.* as before.

Or,

Take of the Roots of Maſterwort, Gentian, and Snake-root, of each ſeven Ounces; green Walnuts bruiſed eighty; Venice-treacle and Mithridate of each three Ounces; Camphire ſix Drams; of the Roots of Rue and Elecampane, of each three Ounces; Hore-hound ſix Ounces; Saffron ſix Drams; Proof Spirit twelve Gallons; digeſt, *&c.* as before.

Or,

Take Dragons, Roſemary, Wormwood, Sage, Scordium, Mugwort, Scabious, Baum, Carduus, Angelica, Marigold-flowers, Centory, Betony, Pimpernel, Celadine, Rue, and Agrimony, of each three Pounds; of the Roots of Gentian, Zeadory, Liquorice, and Elecampane, of each twelve Ounces; twelve Gallons of Spirits; digeſt, *&c.* as before.

Or,

Take of green Walnuts, five Pounds; of Angelica-root two Pounds; of the Leaves of Angelica, Rue, Sage, and Scordium, of each ten Handfuls; of Nutmegs, Long Pepper, Ginger, Camphire, and Gentian-root, of each five Ounces; of Snake-root, Contrayerva, Elecampane, Zeadory, and Viper's Fleſh, of each thirteen Ounces; Venice Treacle and Mithridate of each thirteen Ounces; White-wine Vinegar ſeven Pounds; Proof Spirits twelve Gallons; digeſt, *&c.* as before.

You may either dulcify your Plague-water, or not, as you ſee occaſion.

All the above Receipts for making Plague Water are in uſe; but the firſt the moſt elegant, containing nothing but what is proper in the Intention, and at the ſame time adapted to give its Virtues by Diſtillation; which cannot be ſaid of any of the reſt, ſeveral of the Ingredients adding no Virtue at all to the Water. Of this Kind are the Celandine, Carduus, Centory, Gentian, Walnuts, *&c.*

Plague Water is a noble Alexipharmic, and a high Carminative Cordial in malignant Caſes, and of great Uſe in Lowneſs of Spirits, and Depreſſions.

CHAP. XVI.

Of Dr. Stephens's *Water.*

THIS Water has its Name from its Inventor, a Phyſician of great Learning and Practice.

Recipe for ten Gallons of Dr. Stephens's *Water.*

Take of Cinnamon, Ginger, Galangal, Cloves, Nutmegs, Grains of Paradiſe, the Seeds of Aniſe, ſweet Fennel, and Caraway, of each one Ounce; of the Leaves of Thyme, Mother of Thyme, Mint, Sage, Penniroyal, Roſemary, Flowers of red Roſes, Camomile, Origanum, and Lavender, of each eight Handfuls; of clean Proof Spirit twelve Gallons, Water two Gallons; digeſt all twenty-four Hours, and then draw off ten Gallons, or till the Faints begin to riſe. Dulcify with fine Sugar to your Palate.

This is a noble Cephalic Cordial and Carminative; and alſo in ſome Degree an Hyſteric; good in all Cholic Pains in the Stomach and Bowels, and Diſeaſes of the Nerves.

CHAP.

CHAP. XVII.

Of Surfeit Water.

THERE are two Kinds of Surfeit-water, one made by Diſtillation, and the other by Infuſion, the former is generally called white *Surfeit Water*, and latter red *Surfeit Water*.

Recipe for ten Gallons of white Surfeit Water.

Take Marigold-flowers, Mint, Centory, Roſemary, Scordium, Mugwort, Carduus, Rue, St. John's-wort, Baum, and Dragons, of each ſeven Handfuls; of the Roots of Peony, Viper-graſs, Butter-burr, and Angelica, of each one Pound and a Half; of Galangal, Calamus Aromaticus, and of the Seeds of Angelica and Caraway, of each four Ounces; of the Flowers of red Poppies ten Handfuls; Proof Spirit twelve Gallons, Water two Gallons; digeſt for twenty-four Hours, and then draw off ten Gallons, or till the Faints begin to riſe; and dulcify with fine Sugar.

This is a good Cordial, but would not be the worſe, if the Carduus, Mugwort, Rue and St. John's-wort, were omitted, as little of their Virtues can be obtained by Diſtillation. It is, however, a good Alexipharmic, Carminative, and Stomachic; and therefore good in all flatulent Pains in the Stomach and Bowels, in Nauſeas and Surfeits, from whence it had its Name.

Recipe for making ten Gallons of red Surfeit Water.

Take of the Flowers of red Poppies, two Buſhels, eleven Gallons of clean Proof Spirit, and digeſt them with a gentle Heat for three Days, or till the Spirit has extracted all the Colour of the Flowers: Then preſs out the Liquor from the Flowers, and add to the Tincture of the Seeds of Caraway and Coriander, and Liquorice-root ſliced, of each ten Ounces; of Cardamoms and Cubebs of each four Ounces; of Raiſins ſtoned five Pounds; of Cinnamon five Ounces; of Nutmegs, Mace, and Ginger, of each three Ounces; of Cloves two Drams; of Juniper-berries three Ounces; let the whole be digeſted three Days, then preſs out the Liquor adding to it a Gallon of Roſe-water; and then ſtrain or filter the whole through a Flannel Bag.

This Water is much Superior to the preceding, as all the Ingredients will give their Virtues to the Tincture, tho' they will not riſe in Diſtillation. It is a noble Alexipharmic,

pharmic, it ſtrengthens the Stomach, and greatly aſſiſts Digeſtion; it is alſo an excellent Carminative and good againſt the Cholic and Gripes: Its Cordial Virtues renders it ſerviceable in all Tremblings of the Nerves, and Depreſſions of the Spirits.

CHAP. XVIII.

Of Wormwood Water.

THERE are two Sorts of Wormwood Water, diſtinguiſhed by the Epithets of *greater* and *leſſer*.

Recipe for making ten Gallons of the leſſer Compoſition of Wormwood Water.

Take of the Leaves of dried Wormwood five Pounds; of the leſſer Cardamom-ſeeds five Ounces; of Coriander-ſeeds one Pound; of clean Proof Spirit eleven Gallons; Water one Gallon; draw off ten Gallons, or till the Faints begin to riſe, with a gentle Fire. It may be dulcified with Sugar, or not, at pleaſure.

This is a good Stomachic and Carminative; and on that Account often called for.

Recipe for ten Gallons of the greater Compoſition of Wormwood Water.

Take of the common and Sea Wormwood, dried, of each ten Pounds; of Sage, Mint, and Baum dried, of each twenty Handfuls; of the Roots of Galangal, Ginger, Calamus Aromaticus, and Elecampane; of the Seed of ſweet Fennel and Coriander, of each three Ounces; of Cinnamon, Cloves, and Nutmegs, the leſſer Cardamoms and Cubebs, of each two Ounces. Cut and bruiſe the Ingredients as they require; digeſt them twenty-four Hours, in eleven Gallons of fine Proof Spirit, and two Gallons of Water, and draw off ten Gallons, or till the Faints begin to riſe, with a pretty briſk Fire.

This is an excellent Compoſition, and good in all Diſeaſes of the Stomach ariſing either from Wind or a bad Digeſtion. It is greatly in uſe in ſome Parts of *England*, but comes too dear for the common Sort of People; on which account a Cordial Water is often ſold under the Title of *the greater Compoſition of Wormwood Water*; drawn from the Leaves of Wormwood, Orange and Lemon-peel, Calamus Aromaticus, Pimento, and the Seeds of Aniſe and Caraway; which being all cheap Ingredients, the Compoſition may be ſold at a moderate Price. A Water drawn in this manner is a good Carminative; but far inferior to that made by the above Recipe.

CHAP. XIX.

Of Antiſcorbutic Water.

THE Scurvy being a Diſeaſe very common in *England*, this Antiſcorbutic Water will be of great uſe.

Recipe for making ten Gallons of Antiſcorbutic Water.

Take of the Leaves of Water-creſſes, Garden and Sea Scurvy-graſs, and Brooklime of each twenty Handfuls; of Pine-tops, Germander, Horehound, and the leſſer Centory, of each ſixteen Handfuls; of the Roots of Briony and ſharp-pointed Dock, of each ſix Pounds; of Muſtard-ſeed one Pound and a Half. Digeſt the whole in ten Gallons of Proof Spirit, and two Gallons of Water, and draw of by a gentle Fire.

This is a good Water for the Purpoſes expreſſed in the Title, *viz.* againſt Scorbutic Diſorders. It is alſo good in Tremblings and Diſorders of the Nerves.

CHAP. XX.

Of compound Horſe-radiſh Water.

THERE are ſeveral Methods of making this compound Water; but the three following Recipes are the beſt that has hitherto appeared.

Recipe for making ten Gallons of compound Horſe-radiſh Water.

Take of the Leaves of freſh Garden Scurvy-graſs ſixteen Pounds; of freſh Horſe-radiſh Root, and the yellow Part of Seville Orange-peel of each eight Pounds; of Nutmegs two Pounds. Cut and bruiſe theſe Ingredients, and digeſt them twenty-four Hours in ten Gallons of Proof Spirit and two Gallons of Water; after which draw off ten Gallons with a gentle Fire.

Or,

Take of the freſh Roots of Horſe-radiſh nine Pounds; of the Leaves of Water-creſſes and of Garden Scurvy-graſs, of each ſix Pounds; of the outward, or yellow Peel of Oranges and Lemons, of each nine Ounces; of *Winter*'s Bark twelve Ounces; of Nutmegs three Ounces. Cut, bruiſe and digeſt the Ingredients in ten Gallons of

Proof Spirit, and two Gallons of Water, and draw off ten Gallons as before.

Or,

Take of the Leaves of Garden and Sea Scurvy-graſs freſh gathered in the Spring, of each ſeven Pounds; Brook-lime, Water-creſſes, and Horſe-radiſh-root of each ten Pounds; of *Winter*'s Bark and Nutmegs of each ten Ounces; of the outer Peel of Lemons one Pound; of Arum-root freſh gathered two Pounds; Proof Spirit ten Gallons, Water two Gallons. Bruiſe and ſlice the Ingredients; digeſt the whole, and draw off ten Gallons as before.

Either of the above Receipes will produce an excellent Water, againſt all Obſtructions of the Kidnies and other *Viſcera*. It is alſo of great Service in the Jaundice, Cachexies and Dropſies; and in all Scorbutic Caſes, it is equal to any Medicine; as it opens the minute Paſſages, promotes Tranſpiration, and cleanſes the Skin, and other ſmall Glands, which are filled with groſs Particles to the Detriment of their proper Offices.

CHAP. XXI.

Of Treacle Water.

THIS Water is made in a very different Manner, by different Perſons; but the following Recipes are the beſt for this Purpoſe.

Recipe for making ten Gallons of Treacle Water.

Take of the freſh and green Huſks of Walnuts four Pounds and a Half; of the Roots of Butter-burr, three Pounds; of Angelica and Maſter-wort, of each one Pound and a Half; of Zedoary twelve Ounces; of the Leaves of Rue and Scordium of each eighteen Ounces; of Venice Treacle three Pounds; digeſt them together four Days in twelve Gallons of Proof Spirit, and two Gallons of Water; after which draw off ten Gallons; to which add a Gallon and a Half of diſtilled Vinegar.

Or,

Take of the Rind of green Walnuts five Pounds; of Rue four Pounds; of Carduus, Marigold, and Balm, of each three Pounds; of freſh gathered Butter-burr-roots two Pounds and a Half; of Burdock-root one Pound and a Half; of green Scordium twelve Handfuls; of Venice Treacle and

Mithridate of each two Pounds and a Half; Proof Spirit twelve Gallons; and Water two Gallons. Digeſt, and draw off ten Gallons, as before; to which add a Gallon and a Half of diſtilled Vinegar.

Some inſtead of diſtilled Vinegar unadviſedly add a proportional Quantity of Spirit of Vitriol, or other Mineral Acid, to their Treacle Water; but this Practice is very pernicious; and intirely alters the Nature of the Medicine. Vinegar is an Acid made by a double Fermentation, and therefore of a different Nature from the acid Juices of Vegetables, whether Oranges, Lemons, Citrons, Limes, Crabs, Barberies, *&c.* as alſo from thoſe of Minerals, whether Vitriol, Sulphur, *&c.* It is indeed, like them, acid on the Tongue; but then it liquifies the Blood, is antipeſtilential, ſuddenly cures Drunkenneſs, Surfeits, the Plague, and does a thouſand Things both as a Menſtruum and Medicine, which they will not. This is an admirable and ſprightly Alexipharmic and Sudorific, to which the Vinegar added, greatly contributes, and therefore good in Fevers, the Small-pox, Meaſles, and other peſtilential Diſorders.

CHAP. XXII.

Compound Camomile-flower Water.

THE Camomile-flowers generally uſed are the double Sort, conſiſting wholly of Petals or Flower Leaves, without any Appearance of Stamina or Piſtil, or the other Parts of Fructification, which in the ſingle Flowers ſhew themſelves in the Middle in Form of yellow Threads. But tho' the double Flowers are the Sort commonly uſed, they are not the beſt, or thoſe which ought to be choſen. The ſingle Flowers, or thoſe which conſiſt of only a ſingle Series of Leaves, or Petals, in Form of Rays, ſurrounding a Cluſter of yellow Threads or Stamina, have much more Virtue. It is indeed in theſe Stamina and their Apices, that great Part of the Virtue of the Flower reſides, and theſe are wanting in the double Flowers.

Recipe for making ten Gallons of compound Camomile-flower Water.

Take of dried Camomile-flowers, five Pounds; of the outer Peel of Oranges, ten Ounces; of the Leaves of common Wormwood, and Penny-royal, of each twenty Handfuls; of the Seeds of Aniſe, Cummin,

min, and ſweet Fennel, the Berries of Bay and Juniper, of each five Ounces. Digeſt theſe Ingredients two Days in ten Gallons of Proof Spirit, and three Gallons of Water, and draw off ten Gallons with a gentle Fire.

This is a very good Carminative and Stomachic; good in all Cholics and other Diſorders of the Bowels from Wind. It alſo provokes the Appetite and promotes a good Digeſtion. Its Virtues as a Stomachic will not be leſs when made from the double Flowers; but if intended as a Carminative it ſhould be made with the ſingle Flowers.

CHAP. XXIII.

Imperial Water.

THIS Cordial Water has its Name from the great Opinion conceived of it by its firſt Inventors; and tho' their Opinion was, perhaps, juſtly founded, yet it is not at preſent ſo much in uſe as formerly.

Receipe for making ten Gallons of Imperial Water.

Take of the dried Peels of Citrons and Oranges, of Nutmegs, Cloves, and Cinnamon, of each one Pound; of the Roots of Cypreſs,

Cypreſs, Florintine Orrice, Calamus Aromaticus, of each eight Ounces; of Zedoary, Galangal and Ginger, of each four Ounces; of the Tops of Lavender and Roſemary, of each ſixteen Handfuls; of the Leaves of Marjoram, Mint, and Thyme, of each eight Handfuls; of the Leaves of white and damaſk Roſes, of each twelve Handfuls. Digeſt the whole two Days in ten Gallons of Proof Spirit, and four Gallons of damaſk Roſe Water; after which draw off ten Gallons.

All the Ingredients in Compoſition coincide in one intention, and are ſuch as will give their Virtues by Diſtillation; Circumſtances that cannot be ſaid of many other compound Waters. It is a very good Cephalic, and of great uſe in all nervous Caſes. It is alſo a very pleaſant Dram, eſpecially if dulcified with fine Sugar, and good upon any ſudden Sickneſs of the Stomach.

CHAP. XXIV.

Of Compound Piony Water.

THE Piony, from whence this Compound Water takes its Name, is a Plant divided into Male and Female; but the former is the Sort intended to be uſed in this Compoſition. The Male and Female

Plants are diſtinguiſhed both by their Roots and Leaves. The Male has a ſhining blackiſh Leaf, from which the Female differs by being lighter coloured. The Root of the Male kind is more bulbous, ſhorter, and branched than that of the Female, whoſe Shoots are much longer and thinner.

Recipe for making ten Gallons of compound Piony Water.

Take of the Roots of Male Piony, twelve Ounces; of thoſe wild of Valerian, nine Ounces; and of thoſe of white Dittany ſix Ounces; of Piony-ſeed four Ounces and a Half; of the freſh Flowers of Lilly of the Valley, one Pound and a Half; of thoſe of Lavender, Arabian Stæchas, and Roſemary, of each nine Ounces; of the Tops of Betony, Marjoram, Rue and Sage, of each ſix Ounces; ſlice and bruiſe the Ingredients, and digeſt them four Days in ten Gallons of Proof Spirit and two Gallons of Water; after which draw off ten Gallons.

Or,

Take of the Flowers of Lillies of the Valley freſh gathered, and Male Piony-root, of each two Pounds; of Cinnamon and Cubebs, of each eight Ounces; of Roſemary and Lavender Flowers, of each two

Handfuls; of damaſk Roſe Water two Gallons. Digeſt theſe four Days in ten Gallons of Proof Spirit, and draw off ten Gallons as before.

This is an excellent Cordial, and can be exceeded by nothing in all Nervous Caſes, both in Children and grown Perſons.

CHAP. XXV.

Of Nutmeg Water.

THE Nutmeg is a Kernel of a large Fruit not unlike the Peach, and is ſeparated from that and its inveſtient Coat the Mace, before it is ſent over to us; except when the whole Fruit is ſent over in Preſerve, by way of Sweet-meat, or as a Curioſity. There are two Kinds of Nutmegs, the one called by Authors the Male, and the other the Female. The Female is the Kind in common uſe, and is of the Shape of an Olive: The Male is long and cylindric, and has leſs of the fine aromatic Flavour than the other, ſo that it is much leſs eſteemed, and People who trade largely in Nutmegs will ſeldom buy it. Beſides this oblong kind of Nutmeg we ſometimes meet with others of very irregular Figures; but theſe are mere *Luſus Naturæ*, being produced by the ſame Tree. The long or Male Nutmeg, as we term it, is, by the *Dutch*, called the wild Nutmeg. It is always diſtinguiſhable from the others as well by its want of Fragrancy as by its Shape: It is very ſubject to be worm-eaten, and is ſtrictly forbid by the *Dutch* to be packed up among the other, becauſe it will be the means of their being worm-eaten alſo by the Inſects getting from it into them, and breeding in all Parts of the Parcel. The largeſt, heavieſt, and moſt unctuous of the Nutmegs are to be choſen, ſuch as are of the Shape of an Olive, and of the moſt fragrant Smell.

Recipe for making ten Gallons of Nutmeg Water.

Take of Nutmegs bruiſed one Pound; Proof Spirit ten Gallons; Water two Gallons. Digeſt them two Days, and then draw off ten Gallons with a briſk Fire. You may either dulcify it or not as occaſion offers.

Or,

Take of Nutmegs bruiſed one Pound; Orange-peel two Ounces; Spirit ten Gallons; Water two Gallons. Digeſt, and diſtil as before.

This is an excellent Cephalic and Cordial Water; agreeable to the Palate, comfortable to the Stomach, and grateful to the Nerves. It powerfully diſcuſſes Wind and Vapours from the Stomach and Bowels, and is therefore of great Service in the Cholic, and Griping of the Bowels.

CHAP. XXVI.

Of Compound Bryony Water.

THE white Bryony-root, from whence this Water takes its Name, is one of the largeſt Roots we are acquainted with. It is of an oblong Shape, and is frequently met with of the Thickneſs of a Man's Arm, ſometimes of twice or three times that Bigneſs. Its Texture is ſomewhat lax and ſpungy; conſiderably heavy, but ſo ſoft that the thickeſt Pieces are eaſily cut through with one Stroke of a Knife: It is very juicy, and is externally of a browniſh or yellowiſh white Colour, and of a pure white within: It is of a diſagreeable Smell, and an acrid and nauſeous Taſte.

Recipe for ten Gallons of Compound Bryony Water.

Take of the Roots of Bryony four Pounds; wild Valerian-root one Pound; of Pennyroyal and Rue, of each two Pounds; of the Flowers of Fever-few, and Tops of Savin, of each four Ounces; of the Rind of freſh Orange-peel, and Lovage-ſeeds, of each Half a Pound: Cut or bruiſe theſe Ingredients and infuſe them in eleven Gallons of Proof Spirit, and two Gallons of Water, and draw off ten Gallons with a gentle Heat.

Or,

Take of freſh Bryony-root four Pounds; of the Leaves of Rue and Mugwort, of each four Pounds; of the Tops of Savin ſix Handfuls; of Fever-few, Catmint and Pennyroyal, of each four Handfuls; of Orange-peel eight Ounces; of Myrrh four Ounces; of *Ruſſia* Caſtor, two Ounces; Proof Spirit eleven Gallons, Water two Gallons. Digeſt, and diſtil as before.

This Compoſition is very unpalatable, but excellently adapted to the Intention of an Hyſteric, in which Caſes it is uſed with Succeſs. It is very forcing upon the Uterus, and therefore given to promote Delivery, and forward the proper Cleanſings afterwards; as alſo to open Menſtrual Obſtructions, and in abundance of other Female Complaints. It is alſo good againſt Convulſions in Children, and of ſervice in all nervous Complaints in either Sex.

It may not be amiſs to obſerve here, that the oily Parts of the Ingredients will often render the Water foul and milky. If therefore the Diſtiller deſires to have it fine and tranſparent, the Receiver muſt be removed as ſoon as the Liquor at the Worm appears the leaſt turbid, which will be long before the Faints begin to riſe. The Water, however, is not the worſe for being milky, with regard to its Medicinal Virtue. Some, when the Liquor is milky, throw in a little burnt Allum to fine it; but this ſhould never be done, becauſe it ſpoils the Medicine.

CHAP. XXVII.

Of compound Baum Water, commonly called Eau de Carmes.

THIS has its Name *(Eau de Carmes)* from the Carmelite Friars who were the Inventors of it. The great Profit accruing to theſe Fathers, from the Sale of this Cordial, induced them to keep the Method of making it a Secret; but notwithſtanding all their Care the Secret has at laſt been diſcovered, and the following is the Method by which they prepare it.

Recipe for two Gallons of Eau de Carmes.

Take of the freſh Leaves of Baum four Pounds; of the yellow Peel, or Rind of Lemons, two Pounds; of Nutmegs and Coriander-ſeeds of each one Pound; of

Cloves, Cinnamon, and Angelica-root, of each Half a Pound. Pound the Leaves, bruiſe the other Ingredients, and put them with two Gallons of fine Proof Spirit into a large Glaſs Alembic (the Figure of which with its Head is repreſented on the Plate, Fig. 7.) ſtop the Mouth, and place it in a Bath-Heat to digeſt two or three Days. Then open the Mouth of the Alembic, and add a Gallon of Baum Water, and ſhake the whole well together. After this place the Alembic in Balneum Mariæ, and diſtil till the Ingredients are almoſt dry; and preſerve the Water thus obtained in Bottles well ſtopped.

This Water has been long famous both at *London* and *Paris*, and carried thence to moſt Parts of *Europe*. It is a very elegant Cordial, and very extraordinary Virtues are attributed to it; for it is eſteemed very efficacious not only in Lowneſs of Spirits, but even in Apoplexies; and is greatly commended in Caſes of the Gout in the Stomach.

CHAP.

CHAP. XXVIII.

Of Ladies Water.

THIS Water has its Name from its Dearneſs, being much fitter for the Cloſet than to be ſold in a Shop; but as it is an excellent Cordial, I could not omit giving it a Place here.

Recipe for one Quart of Ladies Water.

Take of Sugar-candy one Pound; of Canary Wine ſix Ounces, Roſe Water four Ounces; boil them into a Syrup, and mix with it of Heavenly Water (deſcribed Chap. xxx.) one Quart; of Ambergriſe and Muſk of each eighteen Grains; of Saffron fifteen Grains; yellow Saunders two Drams. Digeſt the whole three Days in a Veſſel cloſe ſtoped, and decant the clear for uſe.

This is an extraordinary Cordial where the Perfumes are not offenſive. It is too rich to be drank alone, and therefore ſhould be mixed with Water, or ſome other Liquid.

CHAP. XVII.

Of Cephalic Water.

THIS Water has its Name from its uſe, being one of the beſt Cephalic Waters known.

Recipe for ten Gallons of Cephalic Water.

Take of Male Piony-root twelve Ounces; of Angelica and Valerian of each four Ounces and a Half; of the Leaves of Roſemary, Marjoram and Baum; of the Flowers of Lavender, Betony, Piony, Marigolds, Sage, Roſemary, Lilies of the Valley, and of the Lime Tree, of each three Handfuls; of Stæchus, or *French* Lavender, four Ounces and a Half; of red Roſes and Cowſlips, of each ſix Handfuls; of Rhodium Wood and yellow Saunders, of each two Ounces and a Half; of Nutmegs four Ounces and a Half; of Galangals, an Ounce and a Half; of Cardamoms and Cubebs, of each one Ounce. Bruiſe theſe Ingredients, and digeſt them ten Days in eleven Gallons of Proof Spirit, and two Gallons of Water, after which add three Pounds of Cinnamon, and digeſt two Days more; and then draw off ten Gallons with a pretty briſk

Fire, and dulcify it to your Palate with fine Sugar.

This is an excellent Cordial, of great Uſe in Faintings or Sinking of the Spirits, and to remove any ſudden Nauſeas or Sickneſs at the Stomach.

CHAP. XXX.

Of Heavenly Water; or, Aqua Cæleſtis.

THIS Water has its Name from the great opinion its Inventors had of it; but at preſent it is not ſo much called for as formerly.

Recipe for ten Gallons of Heavenly Water.

Take of Cinnamon, Mace, and Cubebs, of each three Ounces; Ginger one Ounce and a Half; Cloves, Galangal, Nutmegs, and Cardamoms, of each one Ounce; Zedoary one Ounce and a Half; Fennel-ſeeds one Ounce; of the Seeds of Aniſe, wild Carrot and Baſil, of each Half an Ounce; Roots of Angelica, Valerian, Calamus Aromaticus, Leaves of Thyme, Calamint, Penniroyal, Mint, Mother of Thyme, and Marjoram, of each an Ounce; Flowers of red Roſes, Sage, Roſemary, and Stæchas, of each ſix Drams; Citron-peel an Ounce: bruiſe all theſe Ingredients and digeſt them three Days in eleven Gallons of Proof Spirit, and four Gallons of Water; after which draw off ten Gallons,

lons, with a pretty briſk Fire; and dulcify the Goods with fine Sugar, adding Ambergriſe and Muſk of each three Scruples.

The Perfumes ordered to be added with the Sugar, rendering the Medicine offenſive to ſome People, they may be omitted at pleaſure. It is eſteemed very efficacious in all nervous Complaints, particularly Palſies, Loſs of Memory, and the like. In all Decays of Age, and languiſhing Conſtitutions, it is exceeded by nothing in ſuddenly raiſing the Spirits, and warming the Blood.

CHAP. XXXI.

Of Spirituous Penniroyal Water.

THE Plant from whence this Water has its Name has been already deſcribed Chap, xiii. Part II.

Recipe for ten Gallons of Spirituous Penniroyal Water.

Take of the Leaves of Penniroyal dried fifteen Pounds; Proof Spirit ten Gallons; Water two Gallons: draw off ten Gallons with a gentle Fire.

This is a good Carminative, of uſe in Cholics and Gripings of the Bowels; alſo in Pluriſies and the Jaundice: It is of known

Efficacy in promoting the Menſes and other Diſorders of the Female Sex.

CHAP. XXXII.

Of Compound Parſley Water.

THIS Plant from whence the Water is denominated is the common Parſley of our Gardens, an Herb too well known to need Deſcription.

Recipe for ten Gallons of compound Parſley Water.

Take of Parſley-root, one Pound and a Quarter; freſh Horſe-radiſh Root, and Juniper-berries, of each fifteen Ounces; the Tops of St. John's-wort, biting Arſmart, and Elder-flowers, of each ten Ounces; the Seeds of wild Carrot, ſweet Fennel, and Parſley, of each ſeven Ounces and a Half; ſlice and bruiſe the Ingredients, and digeſt them four Days in eleven Gallons of Spirit, and two Gallons of Water; after which draw off ten Gallons.

This is a very good Diuretic, frees the Kidnies from Sand and other Matter, which often forms Gravel and Stones. It is alſo good in cholic Pains ariſing from a Stone in the Bladder, and drains off all ill Humours by Urine.

CHAP. XXXIII.

Of Carminative Water.

THIS Water has its Name from its uſe, being an excellent Carminative.

Recipe for ten Gallons of Carminative Water.

Take of freſh Camomile-flowers, four Pounds; Dill-ſeed two Pounds and a Half; Leaves of Baum, Origany, and Thyme, of each one Pound; Seeds of Aniſe and Fennel of each ſix Ounces; Cummin-ſeed four Ounces; Peels of Oranges and Citrons, of each eight Ounces; Juniper and Bay-berries, of each ſix Ounces; Cinnamon eight Ounces; Mace four Ounces. Digeſt theſe Ingredients, bruiſed in eleven Gallons of Proof Spirit, and two Gallons of Water; after which draw of ten Gallons; and dulcify it with fine Sugar.

This is an admirable Carminative, and therefore good in all Cholicky Pains and Gripings of the Bowels; and to remove Sickneſs and Nauſeas from the Stomach.

CHAP. XXXIV.

Of Gout Water.

THIS Water alſo has its Name from its uſe, being of great Service in that Diſtemper.

Recipe for ten Gallons of Gout Water.

Take of the Flowers of Camomile, Leaves of Penniroyal, Lavender, Marjoram, Roſemary, Sage, and Ground-pine, of each eight Ounces; Myrrh four Ounces; Cloves and Cinnamon of each one Ounce; Roots of Piony two Ounces; Pellitory of *Spain*, and Cypreſs Orrice, of each one Ounce; the leſſer Cardamoms and Cubebs, of each Half an Ounce; Nutmegs, two Ounces: Cut and bruiſe theſe Ingredients and digeſt them four Days in eleven Gallons of Proof Spirit and two Gallons of Water; then draw off ten Gallons, and dulcify with fine Sugar.

This is a very good Water in all nervous Caſes; and a continued moderate Uſe of it will comfort and fortify the Fibres, ſo as to prevent the Diſcharge of ſuch Juices upon the Joints as cauſe arthritic Pains and Swellings. It is alſo of excellent Uſe in Palſies, Epilepſies, and Loſs of Memory; particularly when theſe Diſtempers proceed from old Age, or when the principal Springs of Life begin to decay.

CHAP. XXXV.

Of Anhalt Water.

THIS Water is ſuppoſed to have been invented by a celebrated Phyſician of *Anhalt*, a Province of the Circle of Upper *Saxony*.

Recipe for making ten Gallons of Anhalt Water.

Take of the beſt Turpentine a Pound and a Half; Olibanum three Ounces; Aloes-wood powdered one Ounce; Grains of Maſtick, Cloves, July-flowers, or Roſemary-flowers, Nutmegs and Cinnamon of each two Ounces and a Half; Saffron one Ounce; powder the whole and digeſt them ſix Days in eleven Gallons of Spirit of Wine; adding two Scruples of Muſk tied up in a Rag; and draw off in Balneum Mariæ till it begins to run foul.

This Water is a high aromatic Cordial, invigorates the Inteſtines, and thereby promotes Digeſtion and diſpels Flatulencies. It is alſo in great Repute as a ſovereign Remedy for Catarrhs and Pains ariſing from

Colds; as alſo in Palſies, Epilepſies, Apoplexies and Lethargies, the Parts affected being well rubbed with it.

CHAP. XXXVI.

Of Vulnerary Water, or, *Eau d'Arquebuſade.*

THIS Vulnerary Water is greatly eſteemed abroad; and if properly tried, there is no doubt of its obtaining the ſame Reputation here.

Recipe for five Gallons of Vulnerary Water.

Take of the Leaves, Flowers and Roots of Comfrey, Leaves of Mugwort, Sage, and Bugle, of each eight Handfuls; Leaves of Betony, Sanicle, or Ox-eye Daiſy, the greater Figwort, Plantain, Agrimony, Vervain, Wormwood, and Fennel, of each four Handfuls; St. John's-wort, Birth-wort, Orpine, Paul's-betony, the leſſor Centory, Yarrow, Tobacco, Mouſe-ear, Mint, and Hyſſop, of each two Handfuls: Cut them, bruiſe them well in a Mortar, and pour on them three Gallons of white Wine and two Gallons and a Half of Proof Spirit; digeſt the whole ſix Days with a gentle Heat, in a Veſſel cloſe ſtopped: after which diſtil off with gentle Fire, about five Gallons,

lons, or till it begins to run milky from the Worm.

This Water is of excellent Service in Contuſions, Tumors attending Diſlocations, Fractures and Mortifications, the Part affected being bathed with it. Some alſo uſe it to deterge foul Ulcers, and incarn Wounds; from whence it was called Vulnerary Water.

CHAP. XXXVII.

Of Cedrat Water.

THE Fruit called *Cedrat* by the *French* is a Species of the Citron, called by Botaniſts *Citratum Florentinum, fructu Mucronato & recurvo, Cortice verrucoſo Odoratiſſimo*, Florentine Citron, with a pointed Fruit, which is recurved, and a warted ſweet ſmelling Rind. This Fruit is in ſo great Eſteem, that they have been ſold at *Florence* for two Shillings each, and are often ſent as Preſents to the Courts of Princes. It is only found in Perfection, in the Plain between *Piſa* and *Leghorn*; and tho' the Trees which produce this Fruit have been tranſplanted into other Parts of *Italy*, yet they are found to loſe much of that excellent Taſte with which they abound in thoſe Parts.

Recipe for a Gallon of Cedrat Water.

Take the yellow Rinds of five Cedrats, a Gallon of fine Proof Spirit, and two Quarts of Water: Digeſt the whole twenty-four Hours in a Veſſel cloſe ſtoped; after which draw off one Gallon in Balneum Mariæ, and dulcify with fine Loaf Sugar.

This is eſteemed the fineſt Cordial yet known; but as it is very difficult to procure the Fruit here, I ſhall give the Method of making this celebrated Cordial, with the Eſſence or eſſential Oil of the Cedrat, which is often imported from *Italy*.

Recipe for a Gallon of Cedrat Water with the Eſſence of the Fruit.

Take of the fineſt Loaf Sugar reduced to Powder a Quarter of a Pound, put into it a Glaſs Mortar, with one Hundred and twenty Drops of the Eſſence of Cedrat, rub them together with a Glaſs Peſtle, put them into a Glaſs Alembic with a Gallon of fine Proof Spirits and a Quart of Water. Place the Alembic in Balneum Mariæ, and draw off one Gallon, or till the Faints begin to riſe; and dulcify with fine Sugar.

You may make this Water without Diſtillation, by mixing the Eſſence with the Sugar, as before directed, and diſſolving it in the Spirit and Water directed as above. But the Water will be foul and milky, and therefore you muſt filtrate it thro' Paper, which will reſtore its Brightneſs and Tranſparency.

But whatever Method is uſed, you muſt be very careful that the Spirit been tirely freed from its eſſential Oil; and therefore if your Spirit be not very cleanly rectified, it will be adviſeable to uſe *French* Brandy, leſt the fine Flavour ſo highly eſteemed in this Cordial be deſtroyed by the Spirit.

CHAP. XXXVIII.

Of Bergamot Water.

THE Bergamot is a Species of the Citron, produced at firſt caſually by an *Italian*'s Grafting a Citron on the Stock of a Burgamot Pear Tree, whence the Fruit produced by this Union participated both of the Citron Tree and Pear Tree. The Inventor is ſaid to have kept the Diſcovery a a long Time a Secret, and enriched himſelf by it.

The Bergamot is a very fine Fruit both in Taſte and Smell; and its Eſſence or eſſential Oil highly eſteemed.

Recipe for a Gallon of Bergamot Water.

Take the outer Rind of three Bergamots, a Gallon of Proof Spirit, and two Quarts of Water. Draw off one Gallon in Balneum Mariæ, and dulcify with fine Sugar.

If you make your Bergamot Water from the Eſſence or eſſential Oil, obſerve the ſame Directions as given in the preceeding Chapter for making Cedrat Water. One Hundred and ſixty Drops of the Eſſence will be ſufficient for a Gallon of Spirit, and ſo in Proportion for a greater or ſmaller Quantity.

CHAP. XXXIX.

Of Orange Cordial Water; or, Eau de Bigarade.

THE Orange called by the *French* Bigarade, is called by Botaniſts *Aurantium maximum, verrucoſo Cortice*, the large worted Orange.

It is a large and beautiful Fruit, and greatly eſteemed for the Fragrancy of its Eſſence. It is common in diverſe Parts of *Italy*, *Spain*, and *Provence* in *France*.

Recipe for making a Gallon of Orange Cordial.

Take of the outer or yellow Part of the Rinds of fourteen Bigarades; Half an Ounce of Nutmegs; a Quarter of an Ounce of Mace, a Gallon of fine Proof Spirit, and two Quarts of Water. Digeſt all theſe together two Days in a cloſe Veſſel; after which draw off a Gallon with a gentle Fire, and dulcify with fine Sugar.

This Cordial is greatly eſteemed abroad, and would be the ſame here if ſufficiently known.

If the Orange Peels are not eaſily procured, one Hundred and forty Drops of the Eſſence may be uſed in their ſtead, and the Water will be nearly equal to that made from the Peels.

CHAP. XL.

Of Jaſmine Water.

THERE are ſeveral Species of Jaſmine, but that Sort intended here is what the Gardeners call, *Spaniſh* White or *Catalonian* Jaſmine. This is one of the moſt Beautiful of all the Species of Jaſmine; the Flowers much larger than any of the others, of a red Colour on the Outſide, and extremely fragrant. But if the Flowers of this Species cannot be procured, thoſe of the common Sort may be uſed, but the Quantity muſt be conſiderably augmented.

Recipe for a Gallon of Jaſmine Water.

Take of *Spaniſh* Jaſmine-flowers twelve Ounces; Eſſence of Florentine Citron, or Burgamot, eight Drops; fine Proof Spirit a Gallon, Water two Quarts. Digeſt two Days in a cloſe Veſſel, after which draw off one Gallon, and dulcify with fine Loaf Sugar.

This is a moſt excellent Cordial, and deſerves to be more known here than it is at preſent.

CHAP. XLI.

Of the Cordial Water of Montpelier.

THIS Water has its Name from the Place where it was firſt made, and what is now brought from thence is ſtill in great Reputation.

Recipe for a Gallon of the Cordial Water of Montpelier.

Take of the yellow Rinds of two Bergamots, or fifty Drops of the Eſſence of that Fruit; Cloves and Mace of each Half an Ounce; Proof Spirit a Gallon; Water one Quart: Digeſt two Days in a cloſe Veſſel, draw off a Gallon, and dulcify with fine Sugar.

CHAP. XLII.

Of Father Andrew's *Water.*

THIS Water has its Name from its Inventor; and is greatly eſteemed in *France*.

Recipe for a Gallon of Father Andrew's *Water.*

Take of white Lilly-flowers eight Handfuls; Orange-flowers four Ounces; Roſe Water a Quart; Proof Spirit a Gallon; Water a Quart: Draw off a Gallon in Balneum Mariæ, and dulcify with fine Sugar.

CHAP. XLIII.

Of the Water of Father Barnabas.

THIS Water has alſo its Name from its Inventor, a Jeſuit of *Paris.*

Recipe for a Gallon of the Water of Father Barnabas.

Take of the Roots of Angelica four Ounces; of Cinnamon and Orris-root, of each Half an Ounce; bruiſe theſe Ingredients in a Mortar; put them into an Alembic, with a Gallon of Proof Spirit and two Quarts of Water; draw off a Gallon with a pretty briſk Fire.

CHAP. XLIV.

Of the Water of the four Fruits.

THIS Water has its Name from the four Fruits in its Compoſition, namely the Cedrat or Florentine Citron, the Bergamot, the common Citron, and the *Portugal* Orange.

Recipe for a Gallon of the Water of the four Fruits.

Take of the Eſſence of Cedrat, fifty Drops; of the Eſſence of Bergamot thirty-ſix Drops; of the Eſſence of Citron ſixty Drops; and of the Eſſence of *Portugal* Orange ſixty-four Drops; fine Proof Spirit one Gallon; Water two Quarts; draw off with a pretty briſk Fire till the Faints begin to riſe, and dulcify with fine Sugar.

This is a very pleaſant and odoriferous Cordial, and in great Eſteem in *France.*

CHAP. XLV.

Of the Water of the four Spices.

THIS Water alſo derives it Name from the four Spices from whence it is drawn, *viz.* Cloves, Mace, Nutmegs, and Cinnamon.

Recipe for a Gallon of the Water of the four Spices.

Take of Cinnamon two Ounces; Nutmegs and Cloves, of each three Drams; Mace ſix Drams; bruiſe the Spices in a Mortar, and add Proof Spirit a Gallon, and Water two Quarts. Digeſt twenty-four Hours in a cloſe Veſſel, and diſtil with a briſk Fire till the Faints begin to riſe; and dulcify with fine Sugar.

This is an excellent Stomachic, good in all Depreſſions of the Spirits and paralytic Diſorders.

CHAP. XLVI.

Of the Water of the four Seeds.

THIS Water has its Name from the four Seeds from whence is it drawn, *viz.* the Seeds of ſweet Fennel, Coriander, Angelica, and Aniſe.

Recipe for ten Gallons of the Water of the four Seeds.

Take of ſweet Fennel-ſeed ſeven Ounces; Coriander-ſeed nine Ounces; of the Seeds of Angelica and Aniſe, of each three Ounces; bruiſe all theſe in a Mortar, and put them into the Still with ten Gallons and a Half of Proof Spirits, and two Gallons of Water; draw off with a gentle Fire till the Faints begin to riſe, and dulcify with fine Sugar.

This Water is a very good Carminative, good in Cholics, Nauſeas of the Stomach, and Gripings of the Bowels.

CHAP. XLVII.

Of the Divine Water.

THIS is one of thoſe Waters whoſe Names have rendered them ſamous. The Baſis of this Water is Orange flowers, the other Ingredients being added to diverſify the Flavour, and render it more agreeable.

Recipe for a Gallon of Divine Water.

Take of Orange-flowers freſh gathered two Pounds; Coriander-ſeed three Ounces; Nutmegs Half an Ounce; bruiſe the Nutmegs and Coriander-ſeeds; and put them, together with the Orange-flowers, into an Alembic with a Gallon of Proof Spirit and two Quarts of Water; draw off the Liquor with a gentle Fire, till the Faints begin to riſe, and dulcify with fine Sugar.

This is a very pleaſant Cordial, both with regard to its Smell and Taſte; and on that Account in great Eſteem abroad.

CHAP. XLVIII.

Of Roman Water.

THIS Water has its Name from its being made firſt at *Rome*; and from whence great Quantities are ſtill exported to different Parts of *Europe*.

Recipe for a Gallon of Roman Water.

Take the outer or yellow Peels of ſix Citrons; two Drams of Mace bruiſed; a Gallon of Proof Spirit, and two Quarts of Water: Draw off with a gentle Fire till the Faints begin to riſe, and dulcify with fine Sugar.

This Water is generally of a red or purple Colour, the former of which may be eaſily given by infuſing in it a few Grains of Cochineal, or the red Parts of Clove Gilly-flowers; and the latter by adding to the above a few Violets. When the Colour is extracted, run the Liquor through the filtrating Bag, and it will be very bright and clear.

CHAP. XLIX.

Of Barbadoes *Water.*

THERE is a great Variety of Waters called by this Name, made by foreign Diſtillers; but the following Recipes will be ſufficient to ſhew the Diſtiller the Method of making them, and how to vary the Flavour of his Waters, ſo as to adapt them to the Taſte of his Cuſtomers.

Recipe for a Gallon of rectified Barbadoes *Water.*

Take the outer Rind of eight large Florentine Citrons; Half an Ounce of Cinnamon bruiſed, and a Gallon of rectified Spirit. Diſtil to a Dryneſs in Balneum Mariæ. Then diſſolve two Pounds of Sugar in a Quart of Water, and mix it with the diſtilled Liquor, and run it thro' the filtrating Bag, which will render it bright and fine.

Recipe for making a Gallon of amber-coloured Barbadoes *Water.*

Take of the yellow Rinds of ſix Bergamots, Half an Ounce of Cinnamon, and two Drams of Cloves. Bruiſe the Spices and digeſt the whole ſix Days in a Gallon of rectified Spirit; and then add a Dram of Saffron, and let the whole ſtand ſix Days longer in Digeſtion; diſſolve two Pounds of fine Sugar in a Quart of Water, add it to the Tincture, and run it thro' the filtrating Bag.

After the ſame manner may be made *Barbadoes* Waters of different Kinds, by adding Lemon, or Orange peels inſtead of thoſe of Citron or Bergamot; or, by varying the Spices.

CHAP. L.

Of Ros Solis.

THE Ros Solis or Sun-dew, from whence this Cordial Water has its Name, is a ſmall low Plant, with a fibrous Root, from whence ſpring ſmall round hollowiſh Leaves, on Foot-ſtalks about an Inch long, covered and fringed with ſhort red Hairs, which give a red Caſt to the whole Leaf. It grows in champaign and moſſy Grounds, in a pale red Moſs, and flowers in *May*.

Recipe for ten Gallons of Ros Solis.

Take of Ros Solis picked clean, four Pounds; Cinnamon, Cloves, and Nutmegs, of each three Ounces and a Half; Marigold-gold-flowers one Pound; Caraway-ſeeds ten Ounces; Proof Spirit ten Gallons, and of Water three Gallons. Diſtil with a pretty briſk Fire, till the Faints begin to riſe. Then take of Liquorice Root ſliced Half a Pound; Raiſins ſtoned two Pounds; red Saunders Half a Pound; digeſt theſe three Days in two Quarts of Water, and ſtrain out the clear Liquor, in which diſſolve three Pounds of fine Sugar, and mix it with the Spirit drawn by Diſtillation.

Recipe for making ten Gallons of Ros Solis by Digeſtion.

Take Ros Solis clean picked three Pounds; Nutmegs, Mace, Cloves, and Cinnamon, the Seeds of Caraway and Coriander of each three Ounces; Ginger, the leſſer Cardamom, Zedoary, and Calamus Aromaticus, of each one Ounce; Cubebs and yellow Saunders of each Half and Ounce; red Saunders three Ounces; red Roſe Leaves dried three Handfuls; Proof Spirit ten Gallons; digeſt the whole ſix Days in a Veſſel cloſe ſtoped, and then ſtrain off the clear Liquor, and dulcify it with fine Sugar.

Or,

Take Ros Solis picked three Pounds; Cinnamon and Nutmegs, Caraway and Coriander-ſeeds, of each three Ounces; Cloves, Mace, and Ginger, of each one Ounce and a Quarter ; Cubebs, Cardamoms, Zedoary, and Calamus Aromaticus, of each Half an Ounce ; red Roſes dried three Ounces ; Liquorice Root ſliced, ſix Ounces ; Raiſins ſtoned one Pound and a Half ; Cochineal and Saffron, of each three Drams ; digeſt the whole eight Days in ten Gallons of Proof Spirits ; ſtrain off, and dulcify as before.

Recipe for ten Gallons of Turin *Ros Solis.*

Take of damaſk Roſes, Orange-flowers, Lilies of the Valley, and Jaſmine-flowers, of each two Pounds and a Half ; Cinnamon five Ounces ; Cloves three Drams : Put theſe Ingredients into an Alembic, with four Gallons and a Half of Water, and draw off three Gallons, with a moderate Fire ; to this Water add ſeven Gallons of Proof Spirit, in which a Dram of Cochineal and two Drams of Saffron has been infuſed ; dulcify with fine Sugar, and run the whole through the filtrating Bag.

All theſe different Kinds of Ros Solis are excellent Cordials, good in all Depreſſions of the Spirits, Nauſeas, and paralytic Diſorders.

CHAP.

CHAP. LI.

Of Uſquebaugh.

USQUEBAUGH is a very celebrated Cordial, the Baſis of which is Saffron. There are different Ways of making this famous Compound; but the following are equal to any I have ſeen.

Recipe for ten Gallons of common Uſquebaugh.

Take of Nutmegs, Cloves, and Cinnamon, of each two Ounces; of the Seeds of Aniſe, Caraway and Coriander, of each four Ounces; Liquorice Root ſliced Half a Pound; bruiſe the Seeds and Spices, and put them together with the Liquorice into the Still with eleven Gallons of Proof Spirits, and two Gallons of Water; diſtil with a pretty briſk Fire till the Faints begin to riſe. But as ſoon as your Still begins to work, faſten to the Noſe of the Worm two Ounces of *Engliſh* Saffron tied up in a Cloth, that the Liquor may run thro' it, and extract all its Tincture, and in order to this you ſhould often preſs the Saffron with your Fingers. When the Operation is finiſhed, dulcify your Goods with fine Sugar.

Recipe for making ten Gallons of Royal Uſquebaugh.

Take of Cinnamon, Ginger, and Coriander-ſeed, of each three Ounces; Nutmegs four Ounces and a Half; Mace, Cloves and Cubebs, of each one Ounce and a Half. Bruiſe theſe Ingredients, and put them into an Alembic with eleven Gallons of Proof Spirit, and two Gallons of Water; and diſtil till the Faints begin to riſe; faſtening four Ounces and a Half of *Engliſh* Saffron tied in a Cloth to the End of the Worm, as directed in the preceding Recipe. Take Raiſins ſtoned four Pounds and a Half; Dates three Pounds, Liquorice Root ſliced two Pounds; digeſt theſe twelve Hours in two Gallons of Water; ſtrain out the clear Liquor, add it to that obtained by Diſtillation, and dulcify the whole with fine Sugar.

Recipe for ten Gallons of Uſquebaugh by Digeſtion.

Take of Raiſins ſtoned five Pounds; Figs ſliced one Pound and a Half; Cinnamon Half a Pound; Nutmegs three Ounces; Cloves and Mace, of each one Ounce and a Half; Liquorice two Pounds; Saffron four Ounces; bruiſe the Spices, ſlice the Liquorice,

quorice, and pull the Saffron in pieces; digeſt theſe Ingredients eight Days in ten Gallons of Proof Spirit, in a Veſſel cloſe ſtoped; then filter the Liquor, and add to it two Gallons of *Canary* Wine, and Half an Ounce of the Tincture of Ambergreaſe.

Recipe for making ten Gallons of French *Uſquebaugh.*

Take of Saffron three Ounces, of the eſſential Oil or Eſſence of Florentine Citron, Bergamot, *Portugal* Orange, and Lemon, of each a Hundred Drops; Angelica-ſeed, Vanellos and Mace, of each one Ounce and a Half; Cloves and Coriander-ſeed of each three Quarters of an Ounce; bruiſe the Seeds and Spices, and put all into an Alembic with eleven Gallons of Proof Spirit, and two Gallons of Water; and draw off with a gentle Fire till the Faints begin to riſe, faſtening to the Noſe of the Worm four Ounces of Saffron in a Cloth. When the Operation is finiſhed dulcify the Goods with fine Sugar.

Theſe Waters are excellent Cephalic Cordials, and Alexipharmics; and are excelled by nothing in ſuddenly reviving the Spirits when depreſſed by Sickneſs, *&c.*

CHAP.

CHAP. LII.

Of Ratafia.

RATAFIA is a Liquor in great Eſteem, and moſt Perſons are acquainted with it; tho' the true Method of making it is known only to a few. There are various Kinds of Ratafia made from different Fruits. I ſhall give Recipes for making thoſe which are at preſent in moſt Eſteem; which may ſerve as Inſtances for making theſe Goods from any other Kinds of Fruit.

1. *Of red Ratafia.*

There are three Sorts of Ratafia drawn from red Fruits, diſtinguiſhed by the Epithets *fine*, *dry*, and *common*.

The Fruits moſt proper to make the red Ratafia are the black Heart Cherry, the common red Cherry, the black Cherry, the Merry or Honey Cherry, the Strawberry, the Raſberry, the red Gooſeberry, and the Mulberry.

Theſe Fruits ſhould be gathered in the Height of their reſpective Seaſons, and the largeſt and moſt beautiful of them choſen for the purpoſe.

Thus with regard to the Heart Cherry, it ſhould be large, fleſhy, and thorough but not over ripe; for then a Part of its Juice will be evaporated on the Tree: Care muſt be alſo taken, that its Colour be not decayed; but clear and almoſt tranſparent, and well taſted.

The black Cherry, or as it is often called, the black Arvon, muſt be extremly ripe, becauſe it is uſed to colour the Ratafia when that of the other fails. The Criterion of judging when it is thoroughly ripe is its Blackneſs; for, when in Perfection, it is perfectly black. It ſhould alſo be remembered that this Fruit is better and more profitable in Proportion to its Sweetneſs; as the Flavour of the Ratafia will be rendered more agreeable, and a leſs Quantity of Sugar neceſſary.

As the Gooſeberry is an acid Fruit, it muſt be choſen as ripe as poſſible. The Fruit large, and the Skin and Huſk ſo tranſparent as to ſee the Seeds through it. The Gooſeberry ſhould be uſed immediately after its being gathered; for it is very liable to ferment, which will inevitably ſpoil the Ratafia. Gooſeberries are chiefly uſed to render the Ratafia dry or ſharp, and conſequently leſs ſoft; and therefore their Quantity ſhould always be proportioned to that Intention.

The Merry to be good ſhould be ſmall, black, the Skin tranſparent, full of Liquor of deep black Purple Colour. The greateſt Care ſhould be taken, that it be freſh gathered, and not rotten. It corrects the acid Juices of the other Fruits by its Sweetneſs, ſoftens the Compoſition; and is of great Service in colouring the Ratafia.

The Mulberry is of the greateſt Service in colouring the Ratafia. It ſhould be choſen large, and fully ripe, at which time it is of a black Purple Colour. Its Taſte alſo greatly contributes to render the Ratafia of a pleaſant and agreeable Flavour.

The Strawberry greatly contributes to increaſe the rich Flavour of the Ratafia; but it muſt be choſen ripe, and large; freſh gathered and not bruiſed. Another Caution neceſſary to this Fruit is, that they are gathered in dry warm Weather; for if gathered in rainy Weather they will want that fine Taſte, for which they are ſo greatly valued.

The Raſberry is alſo added to augment the Richneſs of the Liquor, to which its elegant perfumy Taſte greatly contributes; by its agreeable Acidity it renders the Flavour more briſk and agreeable. It muſt be freſh gathered, full ripe, and free from Spots and Mouldneſs, which this Fruit is particularly ſubject to.

Having thus conciſely enumerated the Qualities requiſite in the ſeveral Fruits, to render the Ratafia of a rich and elegant Flavour, we ſhall proceed to give the beſt Methods for making Ratafia from them.

Recipe for making red Ratafia, fine and ſoft.

Take of the black Heart Cherries twenty-four Pounds; black Cherries four Pounds; Raſberries and Strawberries, of each three Pounds: Pick theſe Fruits from their Stalks, and bruiſe them, in which Condition let them continue twelve Hours; preſs out the Juice, and, to every Pint of it add a Quarter of a Pound of Sugar. When the Sugar is diſſolved run the whole through the filtrating Bag, and add to it three Quarts of clean Proof Spirits. Then take of Cinnamon four Ounces; of Mace an Ounce; and of Cloves two Drams. Bruiſe theſe Spices, put them into an Alembic with a Gallon of clean Proof Spirits and two Quarts of Water, and draw off a Gallon with a briſk Fire. Add as much of this ſpicy Spirit to your Ratafia as will render it agreeable to your Palate; about one fourth is the uſual Proportion.

Ratafia made according to the above Recipe will be of a very rich Flavour, and elegant Colour. It may be rendered more or leſs of a ſpicy Flavour, by adding or diminiſhing the Quantity of Spirit diſtilled from the Spices.

Some in making Ratafia ſuffer the expreſſed Juices of their Fruits to ferment ſeveral Days; by this means the Vinoſity of the Ratafia is increaſed; but, at the ſame time, the elegant Flavour of the Fruits greatly diminiſhed. Wherefore if the Ratafia be deſired ſtronger or more vinous, it may be done by adding more Spirits to the expreſſed Juice; by which means the Flavour of the Fruits may be preſerved, as well as the Ratafia rendered ſtronger.

It is alſo a Method with ſome to tie the Spices in a Linen Rag, and ſuſpend them in the Ratafia. But if this Method be taken it will be neceſſary to augment the Quantity of Spirit firſt added to the expreſſed Juice. There is no great Difference in the two Methods of adding the Spices, except that by ſuſpending them in the Ratafia, the

Liquor is generally rendered leſs bright and tranſparent.

There is alſo another Method practiſed in making Ratafia, which is this: Take the Quantity of Fruit propoſed, bruiſe it, and immediately pour the Spirit on the Pulp. After ſtanding a Day or two expreſs the Juice and Spirit, filtrate it, and add the Sugar and Spices as before. But this Method requires more Spirit than the former, as it will be impoſſible to preſs it all out of the Skins and other Parts of the Fruit remaining after the Juice is extracted.

2. *Of making fine and dry Ratafia from red Fruit.*

Tho' the Ratafia we have juſt mentioned will doubtleſs pleaſe the Palates of many People; yet there are others who would prefer a different Sort; it is therefore neceſſary to know how to make dry as well as ſweet Ratafia, if we are deſirous of pleaſing all Sorts of Palates.

Dry Ratafia is prepared in the ſame manner as the preceding, but the Ingredients are different.

An equal Quantity of Cherries and Gooſeberries are neceſſary in making dry or ſharp

Ratafia; becauſe the Acidity of the Gooſeberries gives the requiſite Flavour to this Sort of Liquor. But, at the ſame time, care muſt be taken that the Gooſeberries be fully ripe; for otherwiſe, tho' Gooſeberries are more acid before they are ripe than afterwards; yet that Acidity is not the Flavour deſired; it is acerb and rough, and will render the Flavour of the Ratafia diſagreeable. The ſame Obſervation holds good alſo with regard to the Cherries; they muſt be fully ripe as in making the ſoft Ratafia.

Inſtead of black Cherries uſed in the Compoſition of the preceding Ratafia, Mulberries ſhould be uſed in this: The reaſon for this Change is, that the Juice of the black Cherry is more ſweet and glutinous than that of the Mulberry, and therefore leſs fit for making dry Ratafia. But the Mulberries muſt be the ripeſt and blackeſt poſſible, in order to give the better Colour to the Liquor.

More Spirit and leſs Sugar in proportion to the Juice of the Fruit, is alſo required in this Compoſition than in the foregoing; but with regard to the Spices, the ſame Quantity is generally added to both.

Recipe for making red Ratafia, fine and dry.

Take of Cherries and Gooſeberries, of each thirty Pounds; Mulberries ſeven Pounds; Raſberries ten Pounds. Pick all theſe Fruits clean from their Stalks, *&c.* bruiſe them, and let them ſtand twelve Hours; but do not ſuffer them to ferment. Preſs out the Juice, and to every Pint add three Ounces of Sugar; when the Sugar is diſſolved run it thro' the filtrating Bag, and to every five Pints of Liquor add four Pints of clean Proof Spirit; together with the ſame Proportion of Spirit drawn from the Spices in the foregoing Compoſition.

But it may not be amiſs to obſerve here, that different Diſtillers uſe different Quantities of the Spirit drawn from the Spices. The beſt Method therefore is to imitate the Flavour moſt univerſally approved of, which may be eaſily done by adding a greater or leſs Proportion of the ſpiced Spirit.

3. *Of mixed Ratafia.*

By mixed Ratafia is meant the Juices of Fruits prepared, and ready to be mixed with the Spirit when called for.

Recipe

Recipe for making mixed Ratafia.

Ratafia is compoſed of Cherries and Gooſeberries; of theſe the beſt are to be choſen, bruiſed, and in that Condition ſuffered to remain ſome Days to ferment. The Juice is then to be ſtrained off, the Quantity of Sugar and Brandy added, and the whole put into a Caſk and cloſe ſtopped. A Lee or Sediment will fall to the Bottom of the Caſk, which Sediment will be of great Uſe in preſerving the Ratafia.

The Proportion of black Cherries muſt be large in this Ratafia, becauſe the Colour, which this is greatly valued for, chiefly comes from the Juice of that Fruit.

The Sugar muſt not be put in at once, becauſe the Acidneſs of the Liquor would cauſe a conſiderable Efferveſcence, but by a little at a time.

Theſe Inſtructions being obſerved, a Ratafia of this Kind may be eaſily made: And as the Spirit is not to be mixed with it, till the Ratafia is called for, a large Quantity of it may be made at a ſmall Expence, when the Fruits are in Perfection, which cannot be done by the common Methods.

Recipe for making mixed Ratafia.

Take of common Cherries, thoroughly ripe, four Hundred and fifty Pounds; Gooſeberries, large and ripe, two Hundred and twenty-five Pounds; black Cherries ripe and large, fifty Pounds. Bruiſe theſe Fruits, and in that Condition let them continue three or four Days to ferment. Then preſs out the Juice, and add one fifth Part of Spirit; that is, if you have two Hundred and fifty Pints of Juice you muſt add to it fifty Pints of Spirit. When your Spirit and Juice are mixed put them into a Caſk, and for every Pint add three Ounces of Sugar. By this means your Ratafia will be always ready to mix with Spirit.

But as the Proportion of Spirit is but ſmall, it will be neceſſary to taſte your Ratafia at leaſt every Month, leſt it ſhould ferment, and by that means loſe both its Flavour and Colour. As ſoon therefore as you perceive the leaſt Alteration in your Ratafia, more Spirit muſt be added to ſtop the Fermentation; and by this Method it may be kept the whole Year.

If you have any Ratafia remaining at the End of the Year, you muſt mix it with that juſt made, adding a large Proportion of black Cherries; becauſe the Colour in the old Ratafia will not be equal to that of the new. Or you may add to your old Ratafia a proper Quantity of the freſh Juice of black Cherries, which will reſtore its Colour, and, in a great Meaſure its Flavour too: So that if your Ratafia has been well preſerved, it will, when mixed with freſh Juice of black Cherries, be but little inferior to the new.

4. *Of white Ratafia.*

As red Fruits are the Baſis of that called red Ratafia, ſo, on the contrary, that made from the Juices of white Fruits is denominated white Ratafia.

There are various Kinds of Ratafia made from various Fruits; but I ſhall only give Recipes for making three or four Sorts, which will be ſufficient for all the reſt, as the Method is nearly the ſame in all.

Recipe for making Ratafia from the Muſcat, or white Frontiniac Grape.

The Berries of this Kind of Grape are large, and grow extremely cloſe upon the Bunches, which are very long, and have commonly two Shoulders: The Fruit, when ripe, has a rich muſky Flavour;

but it is commonly very late in Autumn, before theſe Grapes are in Perfection; and the Berries being ſo very cloſe upon the Bunches, detain the Moiſture in the Centre; ſo that they often periſh: To prevent which ſome curious Perſons look over their Vines, ſoon after the Grapes are formed, and, with a Pair of Sciſſars, cut out all ſmall ones, ſo as to leave the others at a moderate Diſtance, whereby the Sun and Air are eaſily admitted, which diſſipates the Moiſture, and prevents their periſhing. There is another Kind of this Grape, called by ſome the white Frontiniac of *Alexandria*, and by others the *Jeruſalem* Muſcat, which is a very large Grape, and, when ripe, an excellent Fruit; but is rarely brought to Perfection in *England*. The Berries of the *Jeruſalem* Muſcat, are of an oval Shape, and very large. They grow very looſe on the Bunches, are very fleſhy and firm, and, when ripe, are of greeniſh white, and a delicate Flavour.

Either of theſe Kinds of Grapes will make very fine Ratafia; but which ever of them are choſen, they muſt be picked from the Stalks, and only the fineſt Berries made uſe of. The Stones muſt alſo be picked out; for if they are bruiſed with the Berries, the fine Flavour of the Juice will be greatly diminiſhed.

When you have picked the Grapes from the Stalks, and taken out the Stones, preſs out the Juice, and filtrate it through a Flannel Bag. Then add the Quantity of Sugar and Spirit, and flavour it to your mind with a Spirit diſtilled from Spices, in the manner explained below.

The general Proportion of Sugar and Spirit, is, to twenty Pints of the Juice, five Pounds and a Half of Sugar, ten Pints of Spirit, and what Quantity you pleaſe of the ſpicy Spirit.

To make the ſpicy Spirit, take of Mace one Pound, Nutmegs four Ounces, Spirit three Gallons, and draw off the whole in Balneum Mariæ.

By the ſame Method you may make red Ratafia from the red Frontiniac; except that the Grapes, when bruiſed, muſt be ſuffered to ferment three or four Days, before the Juice is preſſed out; becauſe the Colour, which reſides principally in the Skins of the Grapes, will, by that means, be extracted.

The Berries of the red Muſcat, or red Frontiniac, are about the Size of thoſe of the white; but grow much thinner on the Bunches. This Grape, when thoroughly ripe, has the richeſt and higheſt Flavour of any yet known; but it muſt have a dry Soil and a South Aſpect, otherwiſe it ſeldom ripens well in *England*. Beſides the above Grape, there is another called by ſome red Muſcat of *Alexandria*, and by others red *Jeruſalem* Muſcat. This is not quite ſo late in ripening as the white Muſcat of *Alexandria* above deſcribed; and for that reaſon more eſteemed. The Berries of this Kind are not quite ſo large as thoſe of the white, but of the ſame Form, and equal in Goodneſs.

5. *Of Ratifia from Peaches.*

The Ratafia made from the Peach is the fineſt and richeſt Flavour of any made from ſtoned Fruits. It is however neceſſary to gather the Peach when thoroughly ripe, but, at the ſame time not to ſuffer it to hang too long on the Tree: For as, on the one hand, it will not acquire its delicious Flavour and Smell till thoroughly ripe, ſo, on the other, it will loſe both if ſuffered to hang on the Tree, after it has attained to a full Maturity. Another neceſſary Caution is, to gather it in fine warm Weather, and near the Middle of the Day; becauſe then both the Flavour and Smell are in the greateſt Perfection.

It is alſo requiſite to make Choice of the proper Sorts of Peaches; for there is a remarkable Difference in the Flavour of theſe Fruits. Gardeners reckon above thirty Sorts of Peaches, but not more than half that number are proper for making Ratafia. I ſhall therefore give a ſhort Deſcription of thoſe that are moſt proper, that the young Diſtiller may not be diſappointed in making Ratafia from Peaches.

1. The early Purple (called by the *French La Pourprée hâtive.*) This Tree hath ſmooth Leaves: The Flowers large, and open: The Fruit is large, round, and of a fine red Colour: The Fleſh is white, but very red at the Stone; very full of Juice, which has a rich vinous Flavour. This Peach is ripe about the Middle of *Auguſt*.

2. The large, or *French* Mignon. The Leaves of this Tree are ſmooth, and the Flowers large and open. The Fruit is a little oblong, generally ſwelling out on one Side, and of a fine Colour. The Juice is very ſweet, and of a high Flavour; the Fleſh white, but very red at the Stone, which is ſmall, and eaſily ſeparates from the Fleſh. This Peach is ripe in the middle of *Auguſt*.

3. The Chevreuſe; or, belle Chevreuſe. This Tree hath ſmooth Leaves, and its Flowers are ſmall and contracted. The Fruit is of a middling Size, a little oblong, and of an elegant Colour. The Fleſh is white, but very red at the Stone, from which it ſeparates; full of a rich ſugary Juice, and ripens towards the latter End of *Auguſt*.

4. The red Magdalen, called by the *French* about *Paris*, *Magdeleine de Courſon*. The Leaves of this Tree are deeply ſawed, and the Flowers large and open. The Fruit is large, round, and of a fine red Colour. The Fleſh is white, but very red at the Stone, from which it ſeparates. The Juice is very ſugary, and of a rich Flavour. It is ripe the latter End of *Auguſt*.

5. *Smith*'s *Newington*. This Tree hath ſawed Leaves, and large open Flowers. The Fruit is of a middling Size, and of a fine red, next the Sun. The Fleſh is very firm and white, but very red at the Stone, to which it cloſely adhers. It has a rich ſugary Juice, and is ripe the latter End of *Auguſt*.

6. The Chancellor. The Leaves of this Tree are ſmooth, and the Flowers ſmall

and contracted. The Fruit is ſhaped ſomewhat like the Belle Chevreuſe, but rounder. The Fleſh is white and melting, and ſeparates from the Stone, where it is of a fine red Colour. The Skin is very thin, and the Juice remarkably rich. It ripens about the End of *Auguſt*.

7. The Bellegarde; or, as the *French* call it, the *Gallande*. This Tree hath narrow Leaves, and ſmall contracted Flowers. The Fruit is very large and round, and of a deep purple Colour, on the Side expoſed to the Sun. The Fleſh is white, melting, and ſeparates from the Stone, where it is of a deep red Colour. The Juice is very rich. This Peach is ripe about the beginning of *September*.

8. The Bourdine. The Leaves of this Tree are ſmooth, and the Flowers ſmall and contracted. The Fruit is large, round, and of a fine red Colour next the Sun. The Fleſh is white, melting, and ſeparates from the Stone, where it is of a fine red Colour. The Juice is vinous and rich. It is ripe the beginning of *September*, and greatly eſteemed by the curious.

9. The Liſle; or, as the *French* call it, *la petite Violette Hâtive*. This Tree hath ſmooth Leaves, and ſmall contracted Flowers.

ers. The Fruit is of a middle Size, and next the Sun of a fine violet Colour. The Fleſh is of a pale yellow, melting, full of a rich vinous Juice; but adheres to the Stone, where it is very red. This Fruit is ripe the Beginning of *September*.

10. The old *Newington*. The Leaves of this Tree are ſawed, and the Flowers large and open. The Fruit is fair, large, and of a beautiful red Colour next the Sun. The Fleſh is white, melting, and cloſely adheres to the Stone, where it is of a deep red Colour. The Juice is very rich and vinous. It is ripe about the Middle of *September*.

11. The Rambouillet, commonly called the Rambullion. This Tree has ſmooth Leaves, and large open Flowers. The Fruit is of a middling Size, rather round than long, deeply divided by a Furrow in the Middle; of a fine red Colour next the Sun, but of a light Yellow next the Wall. The Fleſh is melting, of a bright yellow Colour, except near the Stone, from which it ſeparates, where it is of a deep red. The Juice is rich and of a vinous Flavour. This Fruit ripens about the Middle of *September*.

12. The Pourprée; or, as the *French* generally call it *Pourprée tardive*, the late Purple. The Leaves of this Tree are very large, and ſawed, the Shoots ſtrong, and the Flowers ſmall and contracted. The Fleſh, except near the Stone, from which it ſeparates, and where it is red, is white, melting, and of a rich ſugary Juice. It is not ripe till near the End of *September*.

13. The Nevette. The Leaves of this Tree are ſawed, and the Flowers ſmall and contracted. The Fruit is large, ſomewhat longer than round, of a bright red Colour next the Sun, and of a pale yellow on the other. The Fleſh is melting, full of a rich Juice, and very red at the Stone, from which it ſeparates. It ripens about the Middle of *September*, and is eſteemed one of the beſt Peaches.

14. The Royal. This Tree hath ſmooth Leaves, and ſmall contracted Flowers. The Fruit is large, round, and of a deep red on the Side expoſed to the Sun, but of a pale yellow on the other. The Fleſh is white, melting, and full of a rich Juice, of a white Colour, except near the Stone from which it ſeparates, where it is of a deep red. This Fruit is ripe about the Middle of *September*.

15 The monſtrous Pavy of Pomponne. The Leaves of this Tree are ſmooth; the Flowers large and open. The Fruit is very large and round, many times fourteen Inches in Circumference. The Fleſh is white, melting, and cloſely adheres to the Stone, where it is of a deep red Colour. The Side next the Sun is a beautiful red, and the other of a pale fleſh Colour. It ripens about the End of *October*, and when the Autumn is warm, is an excellent Peach.

The above Deſcription of the different Kinds of Peaches proper for making Ratafia, will be of uſe to the young Artiſt, as the fine Flavour of this Liquor in a great Meaſure depends on a proper Choice of the Fruits uſed in the Compoſition; and if the Inſtructions relating to the Perfections and Ripeneſs of theſe Fruits are obſerved, an excellent Cordial may be eaſily made in the following manner.

Take your Peaches, bruiſe them, and inſtantly ſtrain out their Juice thro' a Piece of ſtrong Linen. In this Juice, without any Mixture of Water, diſſolve your Sugar. And when the Sugar is melted, add the Quantity of Spirit. No Spices muſt be uſed in this Ratafia, the fine Flavour of the Peach being far preferable to all Spices in the World. The Quantity of either the Sugar or Spirit may be augmented or leſſened according to your own Judgment, or in Proportion to the Price of your Ratafia.

As ſoon as the Spirit is added to the dulcified Juice of the Peaches, the whole muſt be filtrated thro' a Flannel Bag, put into Bottles cloſe ſtopped; for the fine Flavour of the Peach will ſoon be loſt unleſs the Bottles are very well corked. Some alſo cover the Cork with Sealing-wax, which is not a bad Caution.

If you would have your Ratafia of a bright red Colour, your muſt let your bruiſed Peaches ferment a Day or two; by which means the Colour of the Skin, and that of the Fleſh near the Stone, will be extracted, and give your Ratafia the Colour deſired.

4. *Of Orange-flower Ratafia.*

The Orange-flower has been already deſcribed, Page 127. I ſhall therefore only add, that the Orange-flowers uſed in making Ratafia ſhould be large, in their full Perfection, gathered before the Riſing of the Sun, and carefully picked from their Stalks, *&c.* Some blanch the Orange-flowers, by putting them into a ſmall Quantity of

Water, and boiling them a few Minutes over the Fire. But by this Method the moſt volatile Parts of the Flower are evaported, by which the Ratafia will loſe much of its delicate Flavour.

The beſt way therefore is to uſe the Orange-flowers without any previous Boiling.

Recipe for making ten Gallons of Orange-flower Ratafia.

Take of Orange-flowers freſh gathered, and clean picked from their Stalks, *&c.* five Pounds, and infuſe them ſix Days in five Gallons of clean Proof Spirit. Diſſolve fourteen Pounds of Sugar in five Gallons of Water; and after ſtraining the Spirit from the Flowers, mix it with the Syrup, and filtrate the whole thro' a Flannel Bag.

Some inſtead of common Water uſe the Orange-flower Water; but it will be neceſſary in purſuing that Method to take care that the Water be freſh made, and very fragrant; for otherwiſe inſtead of improving, you will greatly injure the fine Flavour of your Ratafia.

The foreign Diſtillers keep two Sorts of Orange-flower Ratafia, one they call *ſingle* and the other *double*. The former is made according to the above Recipe; but in making the latter they uſe double the Quantity of Orange-flowers, and conſiderably augment the Proportion of Sugar. It will be needleſs to give a Recipe for making that Sort of Ratafia, which they call *double*, as the Proceſs is exactly the ſame.

5. *Ratafia of* Portugal *Orange.*

Ratafia may be made from any Sort of Orange; but that of the *Portugal* Orange is reckoned the beſt.

The Oranges muſt be choſen fair, large, and ripe; and the outer or yellow Peel be carefully taken off. The Juice of the Oranges muſt be then preſſed out, dulcified with Sugar, and mixed with the Spirit: after which the outer Rinds are to be added, and after a proper Infuſion, the whole filtrated through a Flannel Bag.

Recipe for making three Gallons of Portugal *Orange Ratafia.*

Take of the Juice of *Portugal* Oranges two Gallons; clean rectified Spirit one Gallon; four Pounds of Sugar; and the outer Peel of ten Oranges. Let the whole infuſe a Fortnight, and then filter the Liquor through a Flannel Bag.

Some inſtead of infuſing the Peel as directed in the above Recipe, put the Peel into the Spirit, and diſtil it in Balneum Mariæ; after which they add the Spirit to the dulcified Orange-juice, and filtrate as before.

The foregoing Recipes for making Ratafia from different Fruits, *&c.* will be ſufficient to inſtruct the young Diſtiller in the Method neceſſary to be purſued for making Cordials of this Kind; for it would be tedious to give Formula's for making all the Kinds of Ratafia kept by different Diſtillers. The Method in all is nearly the ſame; and the Proportion of Sugar and Spirit may be eaſily diſcovered by a few Experiments. I ſhall therefore conclude this Chapter with giving a Recipe for making what is called by our *Engliſh* Diſtillers Ratafia, tho' a very bad Compoſition.

Recipe for making ten Gallons of common Rataſia.

Take of Nutmegs eight Ounces; bitter Almonds ten Pounds; *Lisbon* Sugar eight Pounds; Ambergriſe ten Grains: Infuſe theſe Ingredients three Days in ten Gallons of clean Proof Spirit, and filtre thro' a Flannel Bag for uſe.

The Nutmegs and bitter Almonds muſt be bruiſed; and the Ambergriſe rubbed with the *Lisbon* Sugar in a Marble Mortar, before they are infuſed in the Spirit.

CHAP. LIII.

Of Gold Cordial.

THIS Cordial has it Name from Leaf Gold being formerly uſed in its Compoſition; but as later Experiments have abundantly demonſtrated that Gold can add nothing to its Virtues, it is now generally omitted.

Recipe for making ten Gallons of Gold Cordial.

Take of the Roots of Angelica, four Pounds; Raiſins ſtoned, two Pounds; Coriander-ſeeds, Half a Pound; Caraway-ſeeds and Cinnamon, of each Half a Pound; Cloves two Ounces; Figs and Liquorice-root, of each one Pound; Proof Spirit eleven Gallons; Water two Gallons: The Angelica, Liquorice, and Figs muſt be ſliced, before they are added. Digeſt two Days, and draw off by gentle Heat, till the Faints begin to riſe, hanging in a Piece of Linen faſtened to the Mouth of the Worm an

Ounce of *Engliſh* Saffron. Then diſſolve eight Pounds of Sugar in three Quarts of Roſe Water, and add it to the diſtilled Liquor. Some Diſtillers inſtead of Saffron colour their Goods with burnt Sugar, but by this means the Cordial is greatly impaired in its Virtues.

Or,

Take of the Juice of Alchermes five Ounces; Cloves two Ounces and a Half; Muſk and Ambergriſe, of each Half a Dram; Loaf Sugar ten Pounds; Proof Spirit eleven Gallons; digeſt the whole a Fortnight in a cloſe Veſſel, and filter thro' a Flannel Bag for uſe. Some add thirty Leaves of Gold; but the Medicine is not at all the better for it.

Either of the above Recipes will produce an excellent Cordial; good in Tremblings, Faintings, and Lowneſs of Spirits, *&c.* Alſo in Nauſeas and Griping Pains of the Stomach and Bowels.

CHAP. LIV.

Of Cardamum, or All-fours.

THIS Water has its Name from the four Ingredients in its Compoſition; and in ſome Countries is greatly uſed by the poorer Sort of People.

Recipe for making ten Gallons of Cardamum.

Take of Pimento, Caraway and Coriander-ſeeds, and Lemon-peel, of each three Pounds; of Malt Spirits eleven Gallons; Water three Gallons. Draw off with a gentle Fire, dulcify with ordinary Sugar, and make up the Goods, to the Strength you deſire with clean Water.

This is rarely called for unleſs by the poor Sort of People, who are induced to uſe it from its Cheapneſs; tho' it is a better Cordial than many drawn from dearer Ingredients. It is an excellent Carminative, and is often ſold for Aqua Mirabilis.

CHAP. LV.

Of Geneva.

THERE was formerly kept in the Apothecaries Shops a diſtilled ſpirituous Water of Juniper; but the Vulgar being fond of it as a Dram, the Diſtillers ſupplanted the Apothecaries, and ſold it under the Name of Geneva. The common Sort however is not made from Juniper-berries as it ought to be, but from Oil of Turpentine; the Method of which we ſhall give in the Sequel of this Chapter.

Juniper-berries are a roundiſh Fruit, of the Size of a Pea. They wither and wrinkle in the drying, and we meet with them variouſly corrugated, and uſually covered with a bluiſh reſinous Duſt when freſh. They ſhould be choſen freſh, plump, full of Pulp, and of a ſtrong Taſte and Smell. They are uſually imported from *Germany*, tho' we have plenty of the Trees in *England*. It is but ſmall with us, rarely riſing to more than three or four Feet in Height, and ſcarce ever exceeding five or ſix. Some of the Juniper Shrubs are Males, ſome Females of the ſame Species; the Male Shrubs produce in *April* or *May* a ſmall Kind of Juli with Apices on them very large, and full of Farina; the Females produce none of theſe Juli but only the Berries, which do not ripen till the ſecond Year, and then do not immediately fall off, ſo that it is no uncommon thing to ſee three Sets of Berries, or the Berries of three different Years at once on the ſame Tree.

If you make uſe of *Engliſh* Berries, let them be fully ripe before they are gathered; and in order to preſerve them, ſpread them very thin on a boarded Floor, leaving the Windows and Doors open, and turn them once a Day till they are dry; after which pack them up in Barrels, ſo that no Air may come to them, and they will keep good all the Year. Some, when they are dry, throw them altogether in a Heap in a Corner of the Room, where they continue till wanted for uſe; but the Berries will not keep ſo well by this Method as by being packed in Caſks; they are ſubject to contract a Mouldineſs, which will give a Taſte to the Goods, greatly to their Diſadvantage.

Some Diſtillers as ſoon as their Berries are gathered, put them into Caſks, and cover them with Spirits of Wine; by this Method the Berries are indeed well preſerved, without any Danger of contracting an ill Smell, which they are very apt to do by the other Methods unleſs the greateſt Care be taken; but then it muſt be remembered, that the Spirit will extract great Part of their eſſential Oil, in which their Virtues conſiſt, and conſequently the Berries themſelves will be rendered of little Value. If, therefore, you preſerve your Berries in this manner, you ſhould put into each Caſk or Jarr, only the Quantity you uſe for one Charge of your Still; and when you have occaſion to uſe them, put both the Spirits and Berries into your Alembic.

Thus your Berries will be finely preſerved, without any Loſs either of their eſſential Oil, or the Spirits made uſe of to preſerve.

Recipe for making ten Gallons of Geneva.

Take of Juniper-berries three Pounds, Proof Spirit ten Gallons; Water four Gallons. Draw off by a gentle Fire till the Faints begin to riſe, and make up your Goods to the Strength required with clean Water.

The Diſtillers generally call thoſe Goods which are made up Proof by the Name of Royal Geneva; for the common Sort is much below Proof, ten Gallons of Spirit being ſufficient for fifteen Gallons of Geneva. Nay, what is generally ſold at the common Alehouſes is made in the following manner.

Take of the ordinary Malt Spirits ten Gallons; Oil of Turpentine two Ounces, Bay Salt three Handfuls. Draw off by a gentle Fire till the Faints begin to riſe, and make up your Goods to the Strength required with clean Water.

In this manner is the common Geneva made, and it is ſuprizing that People ſhould accuſtom themſelves to drink it for pleaſure.

There is a Sort of this Liquor called *Holland*'s Geneva, from it being imported from *Holland*, which is greatly eſteemed.

The Ingredients uſed by the *Dutch* are, however, the ſame as thoſe given in the firſt Recipe of this Chapter, only inſtead of Malt Spirit they uſe *French* Brandy. In the firſt Part of this Treatiſe we have ſufficiently ſhewn the Nature of *French* Brandy, and in what its Excellence conſiſts; and, alſo, that by the Help of a clean Spirit, Cordial Waters may be made with the ſame Goodneſs as thoſe drawn with *French*

Brandy. If therefore the Diſtiller be careful in diſtilling and rectifying his Malt Spirit, he may make Geneva equal to that of the *Dutch*, provided it be kept to a proper Age; for all ſpirituous Liquors contract a Softneſs and Mellowneſs by Age, impoſſible to be imitated by Art.

CHAP. LVI.

Of Cherry Brandy.

THIS Liquor is greatly called for in the Country; and is made different ways. Some preſs out the Juice of the Cherries, and having dulcified it with Sugar, add as much Spirit to it as the Goods will bear, or the Price it is intended to be ſold for. But the common Method is to put the Cherries clean picked into a Caſk, with a proper Quantity of Proof Spirit, and after ſtanding eighteen or twenty Days, the Goods are drawn off into another Caſk for Sale, and about two thirds of the firſt Quantity of Spirits poured into the Caſk upon the Cherries. This is ſuffered to ſtand about a Month to extract the whole Virtue from the Cherries, after which it is drawn off as before; and the Cherries preſſed to take out the Spirit they had abſorbed. The Proportion of Cherries and Spirit is not very nicely obſerved; the general Rule is to let the Caſk be about half filled with Cherries, and then filled up with Proof Spirits. Some add to every twenty Gallons of Spirit half an Ounce of Cinnamon, an Ounce of Cloves, and about three Pounds of Sugar, by which the Flavour of the Goods is conſiderably increaſed. But in order to ſave Expences, not only the Spices and Sugar are generally omitted, but alſo great Part of the Cherries, and the Deficience ſupplied by the Juice of Elder-berries. Your own Reaſon therefore, and the Price you can ſell your Goods for, muſt direct you in the Choice of your Ingredients.

By the ſame Method you may make Raſberry Brandy; and if the Colour of the Goods be not deep enough, it may be improved by an Addition of Cherry Brandy.

CHAP. LVII.

Of Honey Water.

THIS Water has its Name from the Honey in its Compoſition; tho' that Ingredient is but of very little Service to the Water, if made according to the uſual Method.

Recipe

Recipe for making a Gallon of Honey Water.

Take of the beſt Honey and Coriander-ſeeds, of each one Pound; Cloves, one Ounce and a Half; Nutmegs and Gum Benjamin, of each an Ounce; Vanilloes Number four. The yellow Rind of three large Lemons: Bruiſe the Cloves, Nutmegs, Coriander-ſeed, and Benjamin; cut the Vanilloes in pieces, and put all into a Glaſs Alembic, with one Gallon of clean rectified Spirit, and after digeſting forty eight Hours, draw off the Spirit in Balneum Mariæ. To a Gallon of the above Spirit, add of damaſk Roſe Water and Orange-flower Water, of each a Pound and a Half; Muſk and Ambergriſe of each five Grains. Grind the Muſk and Ambergriſe with ſome of the Water in a Glaſs Mortar, and afterwards put all together into a digeſting Veſſel, ſhaking them well together, and let them circulate three Days and three Nights in a gentle Heat: Then let all cool; filter and keep the Water in Bottles well ſtopped for uſe.

This Water was firſt made by that faithful Chemiſt Mr. *George Wilſon*, for King *James* II. It is an Antiparalitic, ſmooths the Skin, and gives one of the moſt agreeable Scents imaginable. Forty or ſixty

Drops put into a Pint of clean Water, are ſufficient for waſhing the Hands and Face; and the ſame Proportion to Punch, or any Cordial Water, gives a very agreeable Flavour.

CHAP. LVIII.

Of Unequalled Water, generally ſold by the French Name l'Eau ſans Pareille.

There are two Sorts of this Water, one drawn conſiderably below Proof, and rendered fine by Filtration, and the other without the Faints, the Receiver being removed as ſoon as they begin to riſe. The latter is much the beſt, tho' dearer than the former.

Recipe for making a Gallon of the common Eau ſans Pareille.

Take the outer Peels of twelve Citrons, three Quarts of fine Proof Spirit, and a Quart of Water. Put all into a Glaſs Alembic, and diſtil to a Dryneſs in Balneum Mariæ; filtre the Water, and put it into Bottles well ſtopped.

This is the common Sort, and what is generally ſold here under the Name *Eau ſans Pareille.*

Recipe for making a Gallon of the beſt Sort of Eau ſans Pareille.

Take of the Eſſence of Cedrat, Bergamot, Orange, and Lemon, of each two Drams; rectified Spirit a Gallon; Water two Quarts. Put all into a Glaſs Alembic, and diſtil in Balneum Mariæ till the Faints begin to riſe, when the Receiver muſt be immediately removed.

Some to ſave the Trouble and Expence of Diſtillation, mix the Eſſences with the Spirit of Wine, in the manner before mentioned in the Chapter for making Hungary Water; but this is greatly inferior to that made by Diſtillation.

CHAP. LIX.

Of the Water of Bouquet.

THIS Water has its Name from its Inventor, and is greatly eſteemed abroad for its Smell. It is indeed drawn from the moſt odoriferous Flowers, and therefore it is no wonder that it is held in great Eſteem.

Recipe for making a Gallon of Bouquet's Water.

Take of the Flowers of white Lillies, and *Spaniſh* Jeſſamin, of each Half a Pound; Orange-flowers and thoſe of the Jonquil and Pink of each four Ounces; damaſk Roſes one Pound. Let thoſe be freſh gathered, and immediately put into a Glaſs Alembic with a Gallon of clean Proof Spirit, and two Quarts of Water. Place the Alembic in Balneum Mariæ, draw off till the Faints begin to riſe. You may uſe Spirit of Wine, inſtead of Proof Spirit; but it will be abſolutely neceſſary that it be entirely inodorous; for otherwiſe your Water will fall ſhort of the deſired Perfection.

CHAP. LX.

Of Cyprus Water.

THIS Water is only a dilute Tincture of Ambergriſe; but as it is uſed by thoſe who are fond of that Perfume, and known by the Name of Cyprus Water, or *Eau de Chypre*, I would not omit giving the Recipe here, intending to give a full Account of Ambergriſe in a ſucceeding Chapter.

Recipe for making a Gallon of Cyprus Water.

Take of the Eſſence of Ambergriſe Half an Ounce; put it into a Glaſs Alembic with a Gallon of Spirit of Wine and two Quarts of Water. Place the Alembic in Balneum Mariæ, and draw off till the Faints begin to riſe.

CHAP. LXI.

Of Veſtal Water, or Eau de Veſtale.

THIS is a very agreeable Water, and has been long in uſe in ſeveral Parts of *Europe.*

Recipe for a Gallon of Veſtal Water.

Take of the Seeds of Daucus Creticus or Candy Carrots, two Ounces; Spirit of Wine a Gallon; Water two Quarts. Diſtil in Balneum Mariæ till the Faints begin to riſe. Then add to the Spirit drawn over an Ounce of the Eſſence of Lemons, and four Drops of the Eſſence of Ambergriſe; rediſtil in Balneum Mariæ, and keep the Water in Bottles well ſtoped for uſe.

CHAP. LXII.

Of Beauty Water, or Eau de Beauté.

THIS Water has it Name from its uſe in waſhing the Face, and giving an agreeable Smell. It is drawn from Thyme and Marjoram, which gives it a very elegant Odour.

Recipe for making a Gallon of Beauty Water.

Take of the flowery Tops of Thyme and Marjoram, of each one Pound; Proof Spirits five Quarts; Water one Quart. Draw off in Balneum Mariæ, till the Faints begin to riſe, and keep it cloſe ſtopped for uſe.

CHAP. LXIII.

Of Royal Water.

THIS Water has its Name from being conſidered as the moſt excellent of all ſcented Waters. It is compounded of the Cedrat, Nutmegs and Mace, from whence the moſt elegant Smell is produced; and no Water is at preſent thought equal to this. There are two Sorts of Royal Water, one produced by a ſingle Diſtillation, and the other by a double Diſtillation, and thence called rectified, or double diſtilled Royal Water.

Recipe for a Gallon of Royal Water.

Take of Mace one Ounce; Nutmegs Half an Ounce; Eſſence of Cedrat, or Bergamot two Drams: Put theſe into a Glaſs Alembic (after bruiſing the Spices) with five Quarts of fine Proof Spirit, and draw off one Gallon in Balneum Mariæ.

Recipe for making a Gallon of double diſtilled Royal Water.

Take of Mace one Ounce; Nutmegs Half an Ounce; bruiſe them, and put them into an Alembic with ſix Quarts of fine Proof Spirit, and draw off five Quarts with a gentle Fire. Then take the Spirit drawn off and put it into a Glaſs Alembic, with two Drams of the Eſſence of Cedrat, or Bergamot, and draw off a Gallon in Balneum Mariæ.

Either of theſe Recipes will produce an elegant Water; but the latter greatly exceeds the former.

CHAP. LXIV.

Of the Tincture, or Eſſence of Ambergriſe, Muſk and Civet.

1. AUTHORS have been long divided with regard to the Origin of Ambergriſe; ſome taking it for a vegetable Juice, which either dropped into the Water from the Trunks or Branches of ſome Trees growing on the Sea-coaſt, or exudated from their Roots which ran out of the Earth into the Sea; ſome for an animal Production, and formed either by a ſecret Proceſs from Honey-combs, or the Dung of Birds; and others have very circumſtantially recorded that it is produced in the Whale. Theſe Opinions are however now looked upon as falſe; Ambergriſe being univerſally allowed to be a Mineral Production, of the Number of Bitumens. It is a light and frothy Subſtance, which generally bubbles up out of the Earth in a fluid Form, principally under Water, where it is by Degrees hardened into the Maſſes we ſee it in.

Ambergriſe in its natural, or common Form is a lax and coarſe Subſtance of an irregular Structure, friable, and ſo light as to ſwim upon Water. It is of a pale gray Colour, with a faint Tinge of brown in it; but Pieces perfectly and uniformly of this

Colour are rare, what we uſually meet with is compoſed of whitiſh, yellowiſh, and blackiſh Granules; and in Proportion as there is more or leſs of this whitiſh Matter in theſe Maſſes, it is more or leſs ſcented and valuable. It is found in Pieces of perfectly irregular Figures, and from the Bigneſs of a Pea to thoſe of ten, twenty, or more Pounds; nay there have been Maſſes found of more than two Hundred Weight.

It ſhould be choſen in clean and not over friable Pieces, of a pale grey Colour, and as uniform as poſſible in its Structure, with ſmall black Specks within.

There are two Sorts of Eſſences made from this Perfume; one without Addition of any other odoriferous Subſtance, and the other from Ambergriſe compounded with Muſk and Civit.

Recipe for making the Eſſence of Ambergriſe.

Take of Ambergriſe and white Sugar-candy, of each three Drams; grind them well together in a Glaſs Mortar, adding to them by ſlow Degrees, five Ounces of rectified Spirit of Wine, digeſt the whole in a Martraſs (repreſented Fig. 8.) well ſtopped for four Days, and then ſeparate the clear Tincture or Eſſence, which keep in a Bottle well ſtopt for uſe.

Recipe for making the compound Eſſence of Ambergriſe.

Take of Ambergriſe and white Sugar-candy of each two Drams; Muſk twelve Grains; Civet two Grains; grind all theſe well together in a Glaſs Mortar, adding by Degrees four Ounces of rectified Spirit of Wine; digeſt and ſeparate the clear Eſſence for uſe, as in the preceding Recipe.

2. Muſk is a dry, light, and friable Subſtance; of a dark blackiſh Colour, with ſome Tinge of a purpliſh or blood Colour in it. It is ſoft, and ſomewhat ſmooth and unctuous to the Touch, and of a highly perfumed Smell. It is brought to us ſewed up in a Kind of Bladders or Caſes of Skin, covered with a browniſh Hair, which are the real Bags in which the Muſk is lodged while on the Animal. Muſk ſhould be choſen of a very ſtrong Scent, and in dry ſound Bladders; and muſt be kept cloſe ſhut down in a Leaden Box, by which means it will retain its Smell, and not grow too dry.

Recipe for making the Eſſence of Muſk.

Take of Muſk and white Sugar-candy of each one Dram; rub them well together in a Marble Mortar, adding by Degrees during the rubbing five Ounces of rectified Spirit of Wine: Put the whole into a Matraſs, digeſt three Days in a gentle Heat, and pour off the clear Eſſence, which keep in a Bottle well ſtopt for uſe. Some add a few Grains of Civet to their Eſſence of Muſk, which conſiderably augments the Fineneſs of the Perfume.

3. Civet is produced, like Muſk, in Bags growing to the lower Part of the Belly of an Animal. It is of different Colours from a pure lively whitiſh, to a black; but the nearer it approaches to the white the better it is; of an extremely ſtrong Smell, and a bitteriſh pungent Taſte.

The Eſſence of Civet is rarely uſed alone, but of great ſervice in making Additions to other odoriferous Waters, and therefore I ſhall here give the Method of making it.

Recipe for making the Eſſence of Civet.

Take of Civet and double refined Sugar, of each two Drams; rub them well together in a Glaſs Mortar, adding by Degrees five Ounces of rectified Spirit of Wine: Put the whole into a Matraſs, digeſt three Days in a gentle Heat, and pour off the clear Eſſence for uſe. Tho' the Eſſences in this Chapter are, properly ſpeaking, Chemical Preparations, and therefore foreign to the Buſineſs of the Diſtiller; yet as they are often added to perfumed Waters, and eaſily made, I thought the above Recipes would not be unacceptable to the Reader.

CHAP. LXV.

Of Faints, and the Uſes they may be applied to.

IN many of the preceding Recipes I have ordered the Receiver to be removed as ſoon as the Faints begin to riſe; becauſe otherwiſe the Goods would contract a diſagreeable Taſte and Smell. It is not however to be underſtood that theſe Faints are to be thrown away, nor the Working of the Still immediately ſtopped; for they are far from being of no Value, notwithſtanding they would be of great Diſadvantage if ſuffered to run among the more ſpirituous Parts of the Goods before drawn off. As ſoon therefore as you find the clear Colour of the Goods begins to change of a bluiſh or whitiſh Colour, remove the Receiver, place another under the Noſe of the Worm, and continue the Diſtillation as long as the Liquor running from the Worm is ſpirituous, which may be known by pouring a little of it on the Still Head, and applying a lighted Candle to it; for if it is ſpirituous it will burn, but otherwiſe not. When the Faints will no longer burn on the Still Head, put out the Fire, and pour the Faints in a Caſk for that Purpoſe; and when, from repeated Diſtillations, you have procured a ſufficient Quantity of theſe Faints, let the Still be charged with them almoſt to the Top. Then throw into the Still three or four Pounds of Salt, and draw off as you would any other Charge as long as the Spirit extracted is of a ſufficient Strength; after which the Receiver is to be removed, and the Faints ſaved by themſelves as before.

The Spirits thus extracted from the Faints will ſerve in ſeveral Compoſitions as well as freſh; but they are generally uſed in Aniſeed Water, becauſe the predominant Taſte of the Aniſeeds will entirely cover that they had before acquired from other Ingredients.

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